FRITZ!Box 3272

Installation
and Operation



Table of Contents

Symbols and Highlighting 6

1 The FRITZ!Box 3272 7

2 Ports, Interfaces, Buttons and LEDs 8
2.1 Ports and Interfaces 8
2.2 Buttons 9
2.3 LEDs 10

3 Before You Connect the FRITZ!Box 11
3.1 Contents of the FRITZ!Box Package 11
3.2 Requirements for Operation 11
3.3 Security and Handling 12

4 Connecting the FRITZ!Box 14
4.1 Connecting to Electrical Power 14
4.2 Connecting to the Internet 15

5 Connecting the Computer to the FRITZ!Box 17
5.1 Connecting Computers to the LAN Port 17
5.2 Connecting Computers Wirelessly over Wireless LAN 19

6 The FRITZ!Box User Interface 26
6.1 Opening the User Interface 26
6.2 Overview: Everything at a Glance 26
6.3 Configuring FRITZ!Box with the Wizards 27
6.4 Standard View and Advanced View 28
6.5 Saving the FRITZ!Box Settings 28

7 Configuring an Internet Connection in the FRITZ!Box . . 32
7.1 Configuring an Internet Connection for DSL 32
7.2 Configuring the Internet Connection for Cable 33
7.3 Configuring an Internet Connection for the Mobile Network 33
7.4 Configuring the Internet connection over LAN 1: FRITZ!Box as a router 34
7.5 Surfing the Net 36

8 Password Protection: Security for the FRITZ!Box 37
8.1 A single FRITZ!Box Access for All Users 39
8.2 Individual Access for Each FRITZ!Box User 40
8.3 Forgotten Password: What To Do 47
8.4 Using the FRITZ!Box without a Password 48

9 MyFRITZ!: Global Access to the FRITZ!Box 49
9.1 Configuring MyFRITZ! 49
9.2 Using MyFRITZ! 51
9.3 Security with MyFRITZ! 54

10 Firmware Update: Updating FRITZ!OS 55
10.1 Performing an Update with the Wizard 55
10.2 Performing an online update 56
10.3 Performing a Manual Update 57
10.4 Using the Automatic Search for Updates 58

11 FRITZ!Box as an Internet Router 60
11.1 Child Protection: Controlling Internet Access 60
11.2 Port Forwarding: Making Computers Accessible from the Internet . . 63
11.3 Dynamic DNS: Name Instead of IP Address 65
11.4 Access from the Internet via HTTPS, FTP and FTPS 66
11.5 Prioritization: Right of Way for Internet Access 67
11.6 VPN: Remote Access to the Home Network 69
11.7 DNS Server: Freely Selectable 71
11.8 DNSSEC: Security for DNS Queries 71
11.9 IPv6: The New Internet Protocol 72

11.10 Mobile Network: Replace Faulty DSL 74

12 FRITZ!Box as a Wireless Access Point 76
12.1 Connecting Wireless LAN Devices Securely with the FRITZ!Box . . . 76
12.2 Connecting Wireless Devices with the FRITZ!Box Guest Access . . . 78
12.3 Switching the Wireless Radio Network On and Off by Schedule. . . 79
12.4 Extending a Wireless LAN Network 80
12.5 Wireless LAN—Getting Technical 81

13 The FRITZ!Box Home Network. 86

14 Network Devices in the FRITZ!Box Home Network 88
14.1 Network Settings in the FRITZ!Box 88
14.2 Obtaining an IP Address Automatically 96

15 USB Devices in the FRITZ!Box Home Network 100
15.1 Power Supply for USB Devices 100
15.2 USB Devices on the FRITZ!Box. 100
15.3 Using USB Devices Safely 101
15.4 Configuring Access Rights 102
15.5 Accessing USB Memory 102
15.6 Sharing a USB Printer 103

16 FRITZ!NAS: Storage in the Home Network 110
16.1 Prerequisites for FRITZ!NAS. 110
16.2 Starting FRITZ!NAS 110
16.3 FRITZ!NAS Password Protection 110

17 Saving Energy with FRITZ!Box. 111
17.1 Saving Energy with the Wireless Radio Network 111
17.2 Enabling Energy-saving Mode for USB Hard Drives 111
17.3 Saving Energy at the LAN Ports 112

18 Help in Case of Errors 113
18.1 The User Interface Does Not Open 113
18.2 Cannot Establish a Wireless LAN Connection 117
18.3 Wireless LAN Connection Interrupted 118

19 Taking FRITZ!Box out of Operation 120
19.1 Restoring Factory Settings 120
19.2 Uninstalling Supplementary Software 121

20 Technical Specifications 123
20.1 Ports and Interfaces 123
20.2 Router Functions 123
20.3 User Interface and Display 124
20.4 Physical Specifications 124
20.5 Cable 124

21 Customer Service 125
21.1 Documentation on the FRITZ!Box 125
21.2 Information in the Internet 125
21.3 Feedback on FRITZ!Box 126
21.4 Support from the Support Team 126
21.5 Manufacturer's Warranty 128

Legal Notice 129
Legal Notice 129
Declaration of CE Conformity 130
Disposal Information 131

Drilling Template 132

Index 134

Symbols and Highlighting

Symbols and emphasized text are used to mark certain information in this manual.

Symbols



This symbol marks useful hints and tips.



This symbol indicates important instructions that must be observed to avoid malfunctions.

Highlighting

Marker	Example
Quotation marks designate elements in the user interface, path entries, and names of folders and files	“Home Network” “C:\Pictures” “Documentation”
Pointed brackets mark wild cards	‹Telephone number›
Blue, underlined text designates addresses to be entered in the browser	fritz.box
Blue text designates links and references within this manual	see page 129
Bold type emphasizes important words	Do not click ...

1 The FRITZ!Box 3272

Welcome! We are pleased you decided on a FRITZ!Box. The FRITZ!Box 3272 is the hub of your home network, connecting your computers and network devices with the Internet. You can operate the FRITZ!Box on a DSL line as an Internet router.

The FRITZ!Box is equipped with ports for computers and USB devices and supports wireless LAN technology. This means you can use the FRITZ!Box as a wireless LAN access point for wireless devices like notebooks, tablets or smartphones.

The FRITZ!Box integrates connected computers and network devices into your private home network. The devices can exchange data with each other and enjoy shared access to USB hard drives, USB printers and other USB devices. The FRITZ!Box transmits music, video and image files to suitable playback devices in the home network.

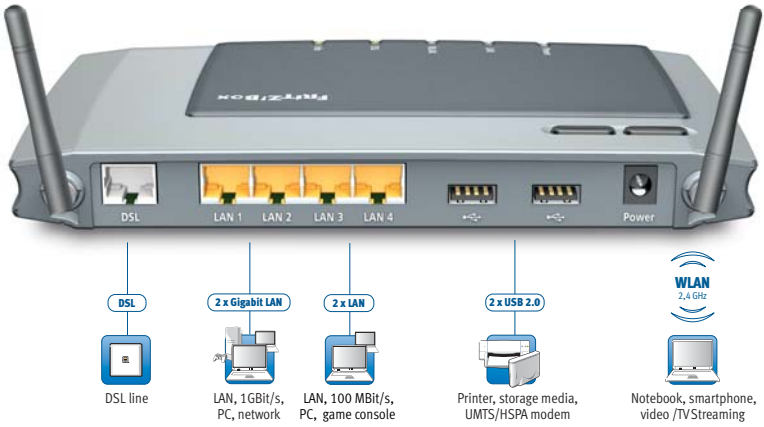
Settings for the FRITZ!Box and for your private network are configured in a user-friendly user interface. The user interface can be opened in any web browser. Wizards guide you step by step through the most important FRITZ!Box functions.

This manual assists you in connecting, configuring and operating your FRITZ!Box. Its intention is not only to introduce to you the many functions of the device, but also to familiarize you with some of the technical context. Have fun using your FRITZ!Box.

2 Ports, Interfaces, Buttons and LEDs

This chapter describes the ports, interfaces, buttons and LEDs of the FRITZ!Box.

2.1 Ports and Interfaces



Possibilities for connecting the FRITZ!Box

- DSL

 Socket for connecting to ADSL2+ and ADSL

- LAN 1 – LAN 4

 4 Ethernet ports for connecting computers and other network devices like game consoles and network hubs

 LAN 1 – LAN 2: gigabit Ethernet (10/100/1000 Base-T)

 LAN 3 – LAN 4: Ethernet (10/100 Base-T)

- USB

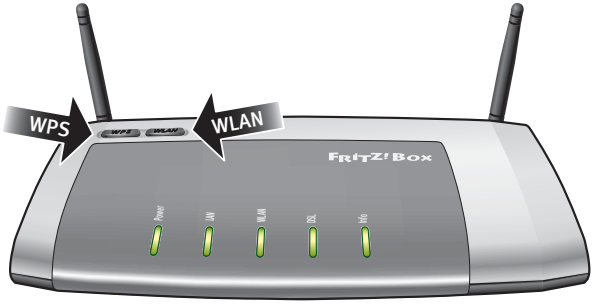
 2 USB 2.0 ports for connecting USB devices like printers or storage media

- **Wireless access point**

 Integrated wireless LAN access point for connecting to wireless devices that use the radio standard IEEE 802.11b, IEEE 802.11g or IEEE 802.11n in the 2.4-GHz frequency band

2.2 Buttons

The FRITZ!Box has two buttons on the top of the housing.



FRITZ!Box buttons

WLAN Button

With the “WLAN” button you can turn the wireless LAN function on and off.

“WPS” Button

With the “WPS” button you can connect wireless devices with the FRITZ!Box by WPS. WPS is an easy way to establish secure wireless connections (see page 20).

2.3 LEDs

Five LEDs are built into the top of the FRITZ!Box 3272, which flash or light up to display various connection statuses and events.

LED	Condition	Meaning
Power	on	• Device has electrical power and the DSL line is ready for operation
	flashing	• Device has electrical power and the connection to DSL is being established or has been interrupted
LAN	on	Network connection is active to at least one connected device (network adapter or hub/switch)
WLAN	on	Wireless LAN function is enabled
	flashing	• Switching the wireless LAN function on or off • Adopting the wireless LAN settings • Performing WPS • WPS procedure aborted: More than two wireless devices are performing WPS at the same time. Repeat the WPS procedure.
DSL	on	Internet connection is active
Info	flashing	• Updating FRITZ!OS , the firmware of your FRITZ!Box • Online meter reached the defined value, or another event defined in the user interface under “System / “Info” Display” is signaled
	flashing red	Error: Open the FRITZ!Box user interface and follow the instructions on the “Overview” page

3 Before You Connect the FRITZ!Box

- Check the contents of your FRITZ!Box package. See the section Contents of the FRITZ!Box Package on page 11 for more information.
- Make sure that the requirements for connecting and operating the FRITZ!Box have been met. See the section Requirements for Operation on page 11 for more information.
- Please see the security and handling instructions in the section Security and Handling on page 12.

3.1 Contents of the FRITZ!Box Package

- FRITZ!Box 3272
- one power supply unit
- one network cable
- one DSL cable
- printed product information

3.2 Requirements for Operation

In order to operate the FRITZ!Box, you must have the following:

- an up-to-date web browser

 Some of the FRITZ!Box functions can be used only with a web browser that supports HTML5, for instance Firefox version 17 or higher, Internet Explorer version 9 or higher, or Google Chrome version 23 or higher.

- a connection to the Internet
 - DSL line with or without a splitter: ADSL/ADSL2/ADSL2+ compliant with DT AG 1TR112 (also IP-based, Annex J) or alternatively, ITU G.992.1, ITU G.992.3 or ITU G.992.5 (Annex B or J)
 - or an Internet cable access with cable modem
 - or a USB modem for mobile Internet access (UMTS/HSPA)
 - or another Internet connection

- for the wireless LAN connection to tablets, smartphones and computers:

 Tablets, smartphones or computers that support wireless LAN (compliant with IEEE 802.11n, IEEE 802.11g or IEEE 802.11b). Computers that do not have wireless LAN integrated can be equipped with wireless LAN support by installing a wireless LAN device like a FRITZ!WLAN USB Stick, for instance.

- for connecting computers using network cable:

 computer with a network port (network adapter standard Ethernet 10/100/1000 Base-T)

3.3 Security and Handling

Before installing and using the FRITZ!Box, please read the following security and handling instructions.

Safety Instructions



When connecting the FRITZ!Box 3272, be sure to observe the following security instructions in order to protect yourself and the FRITZ!Box from harm.

- Avoid overloading power outlets, extension cables and socket strips. Overloaded power supply components present a fire and electrocution risk.
 - Avoid using sockets strips and extension cords if at all possible.
 - Do not connect multiple extension cords or socket strips to each other.
- Before mounting the FRITZ!Box on the wall, make sure that there are no electrical lines, gas or water pipes located where you need to drill the holes.

 If necessary, check the site with a pipe detector or consult with qualified experts.
- Make sure that the ventilation slits on the FRITZ!Box housing are always unobstructed. The ventilation slits provide for air cooling.

 - The FRITZ!Box should not be placed on a carpet or on upholstered furniture.
 - Do not cover the FRITZ!Box.
- Do not place the FRITZ!Box on excessively heat-sensitive surfaces, as the base of the device can heat up during normal operation.
- Do **not** install the FRITZ!Box during an electrical storm.
- During a storm, disconnect the FRITZ!Box from the power supply and from the DSL line.
- Never let liquids get inside the FRITZ!Box. Otherwise, electric shocks or short circuits may result.
- Do not open the FRITZ!Box housing. The device contains hazardous components and should only be opened by authorized repair technicians.
- The FRITZ!Box is intended for indoor use only.

Handling the FRITZ!Box

- You can either place the FRITZ!Box on a horizontal surface or mount it on a wall. For a drilling template to mount the FRITZ!Box on a wall, see page 132.
- Place or hang the FRITZ!Box in a dry location that is free of dust and protected from direct sunlight.
- For ideal operating conditions, mount the FRITZ!Box on a wall with the cables connected on the bottom.
- When connecting the FRITZ!Box to your computer using a network cable, keep in mind that the cable can be no longer than 100 m.
- If you would like to establish wireless connections between the FRITZ!Box and the computer, position the FRITZ!Box at a central location.
- Make sure to keep enough distance from potential sources of interference like microwave devices or electric devices with large metal housings.

4 Connecting the FRITZ!Box

- Connect the FRITZ!Box to the power supply.
- Connect the FRITZ!Box to your Internet connection.

This chapter tells you how.

Before you connect the FRITZ!Box, note the additional instructions in the section Security and Handling on page 12.

4.1 Connecting to Electrical Power



Connecting to the power supply

1. Pick up the power supply unit included in the FRITZ!Box package.

 Use only this power supply unit for connecting to electrical power.

2. Connect the power supply unit to the socket on the FRITZ!Box labeled “Power”.
3. Plug the other end into an AC power outlet.

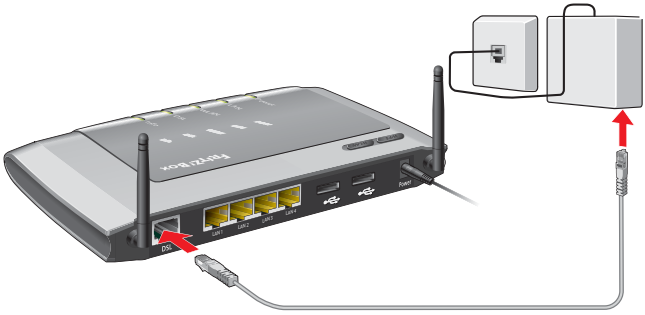
The “Power” LED begins flashing after a few seconds to indicate that the FRITZ!Box is ready for operation.

4.2 Connecting to the Internet

The FRITZ!Box can be connected using various types of Internet connections:

- DSL line
- Internet cable access using a cable modem
- Internet via mobile network using a UMTS/HSPA modem

Connecting to the DSL line



Connecting to a telephone socket

1. Pick up the DSL cable (gray) included in the package.
2. Insert one end of the cable into the socket on the FRITZ!Box labeled “DSL”.
3. Connect the other end to the socket on the DSL splitter labeled “DSL” or similar.

Connecting with the Cable Connection

With an additional cable modem you can also use your FRITZ!Box 3272 on a cable connection. Use a network cable.

1. Connect the free end of the network cable to the LAN (Ethernet) port on the cable modem.
2. Connect the other end of the network cable to the socket on the FRITZ!Box labeled “LAN 1”.
3. Connect a computer with the FRITZ!Box either via wireless LAN or using a network cable (see page 17).

4. Set up the Internet connection for connections via cable in the FRITZ!Box (see page 33).

Connecting to the Internet via the Mobile Network

If no other kind of Internet connection is available, you can use your FRITZ!Box to connect to the Internet via the mobile communications network. A USB modem for mobile Internet access (UMTS/HSPA) is required for this.

The FRITZ!Box supports UMTS/HSPA modems from various manufacturers.

1. Insert the USB modem into the USB port on the FRITZ!Box.
2. Set up the Internet connection via the mobile communications network (see page 33).

Connecting with a Router/Network

You can use the FRITZ!Box at an already existing Internet access. For this the FRITZ!Box is not connected to the router or network.

Connecting Using a Network Cable

1. Connect the FRITZ!Box to the router with a network cable.
2. Insert one end of the cable into the socket on the FRITZ!Box labeled “LAN 1”.
3. Insert the other end of the cable into a network socket on the router or in the network.

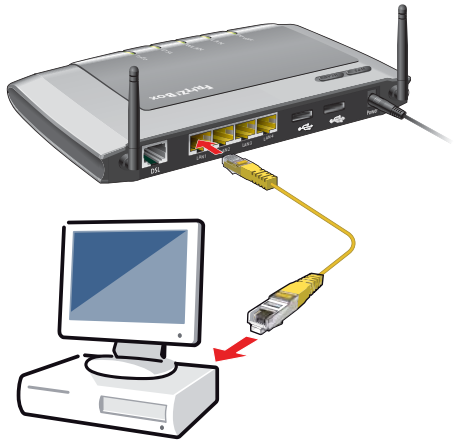
Once you have connected a computer to the FRITZ!Box, you can configure the Internet connection as described in section Configuring the Internet connection over LAN 1: FRITZ!Box as a router on page 34.

5 Connecting the Computer to the FRITZ!Box

You can connect a computer with the FRITZ!Box either using a network cable or wirelessly over wireless LAN.

A computer can be connected with the FRITZ!Box using only one of these methods. It is not possible to connect using the network cable and wireless LAN.

5.1 Connecting Computers to the LAN Port



Connecting a computer using a network cable

1. Insert the network cable included in the package into the network (LAN) port of the computer.
2. Insert the free end of the cable into a LAN socket on the FRITZ!Box.

 For connections at maximum speed (gigabit Ethernet), connect the cable to the “LAN 1” or “LAN 2” socket.

Now the FRITZ!Box and the computer are connected to each other.

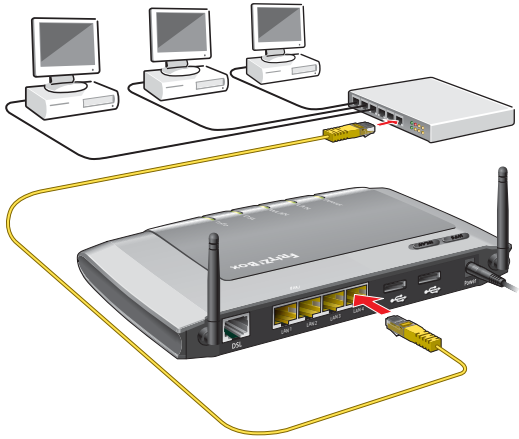
Connecting to Other Computers

To connect other computers to the network ports, additional network (LAN) cable is required. In purchasing a LAN cable, note the instructions in the section Network Cable on page 124.

One computer can be connected to each network port of the FRITZ!Box.

Connecting a Network Hub or Switch

You can also connect a network hub or switch to the LAN ports on the FRITZ!Box.



Connecting the FRITZ!Box to a network hub

1. Insert the network cable included in the package into the uplink port of the network hub or network switch.
2. Insert the free end of the cable into a LAN socket on the FRITZ!Box.

 For connections at maximum speed (gigabit Ethernet), connect the cable to the “LAN 1” or “LAN 2” socket.

The FRITZ!Box and the network hub are now connected with each other.

5.2 Connecting Computers Wirelessly over Wireless LAN

Using wireless LAN radio technology you can connect multiple computers with the FRITZ!Box wirelessly.

Please note the following before establishing a wireless connection between the computer and the FRITZ!Box:

- Wireless device

 A computer to be connected to the FRITZ!Box via wireless LAN must support wireless LAN. This means it must be equipped with a wireless LAN device. A wireless LAN device can be an external wireless LAN adapter—like a USB stick, for example—or a device integrated in the computer. Many modern computers and notebooks come with a wireless LAN device integrated.

- Wireless LAN Security Settings

 In the FRITZ!Box, wireless LAN security settings are enabled upon delivery. Before a computer can establish a wireless connection to the FRITZ!Box, the wireless LAN security settings of the FRITZ!Box must be transferred to the wireless LAN device.

 For this procedure the FRITZ!Box supports the two automatic methods AVM Stick & Surf and WPS (Wi-Fi Protected Setup). The security settings can also be transferred manually.



For more information on wireless LAN, see the section FRITZ!Box as a Wireless Access Point from page 76.

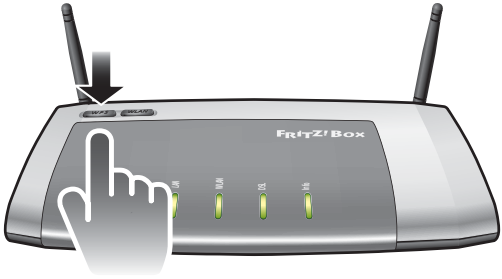
Establishing a Wireless LAN Connection Using WPS

The FRITZ!Box supports WPS (Wi-Fi Protected Setup). Wireless devices that also support WPS can be connected with your FRITZ!Box securely using this method. All of the necessary wireless LAN security settings are transferred in the process. There are two kinds of WPS: the push-button method and the PIN method.

WPS with the Push-button Method

The push-button method (WPS PBC) can be used if your wireless LAN device is equipped with a WPS button, or if WPS can be enabled via the control software of the wireless LAN device.

1. Briefly press the "WPS" button of the FRITZ!Box.



2. When the "WLAN" LED flashes, start WPS on the wireless LAN device. You have two minutes for this task.

 How to start WPS depends on the wireless LAN device. Either press a button on the wireless LAN device, or start WPS in the device's control software.

The connection between the FRITZ!Box and the computer is established automatically. The computer is now connected with the FRITZ!Box.

WPS with the PIN Method

If your wireless LAN device supports WPS, but does not have a button to start the push method nor any possibility to enable it in its control software, use the PIN method to establish the wireless LAN connection.

You can choose between two methods:

- The FRITZ!Box Specifies the PIN
- the wireless LAN device specifies the PIN.

The FRITZ!Box Specifies the PIN

1. Open the FRITZ!Box user interface.
2. Select the “WLAN / Security” menu.
3. Go to the “WPS Quick Connection” page.
4. Enable the setting “WPS enabled”.
5. Select the option “PIN method (WPS-PIN), the FRITZ!Box specifies the PIN”.
6. The PIN will be displayed. Enter this PIN in the control software of the wireless LAN device.
7. Click “Start WPS”.

The “WLAN” LED on the FRITZ!Box flashes slowly, indicating that the WPS procedure has begun. Now a secure wireless LAN connection is being established between the FRITZ!Box and the wireless LAN device.

The Wireless LAN Device Specifies the PIN

1. Open the FRITZ!Box user interface.
2. Select the “WLAN / Security” menu.
3. Go to the “WPS Quick Connection” page.
4. Enable the setting “WPS enabled”.
5. Select the option “PIN method (WPS-PIN), the wireless device specifies the PIN”.
6. Now start the control software of the wireless LAN device. The program outputs a PIN for establishing a connection.
7. Enter this PIN in the FRITZ!Box user interface.
8. Click “Start WPS”.

The “WLAN” LED on the FRITZ!Box flashes slowly, indicating that the WPS procedure has begun. Now a secure wireless LAN connection is being established between the FRITZ!Box and the wireless LAN device.

Establishing a Wireless Connection with AVM Stick & Surf

If you use a FRITZ!WLAN USB Stick from AVM as the wireless LAN device, you can use AVM Stick & Surf to establish a secure wireless LAN connection quickly and conveniently.

1. Switch on your computer.
2. Insert your FRITZ!WLAN USB Stick into one of the USB ports on the FRITZ!Box.

 The wireless LAN security settings are transmitted to the FRITZ!WLAN USB Stick. The “Info” LED on the FRITZ!Box begins flashing quickly.

 As soon as the “Info” LED stops flashing, transmission of the settings has been concluded.
3. Remove the FRITZ!WLAN USB Stick.
4. Now insert the FRITZ!WLAN USB Stick into the USB port of the computer.

The security settings will be adopted and the wireless LAN connection between the FRITZ!Box and the FRITZ!WLAN USB Stick will be established. As soon as the wireless LAN connection has been established the computer is connected to the FRITZ!Box.



See the AVM FRITZ!WLAN USB Stick manual for details.

Transferring the Wireless LAN Security Settings Manually

The wireless LAN security settings for wireless devices can also be transferred manually. Manual transfer is unavoidable if a wireless LAN device does not support any methods for transferring the security settings automatically.

For manual transfer the wireless LAN security settings have to be entered in the wireless LAN software.

Wireless devices are generally delivered with their own wireless LAN software, which is installed in the computer along with the wireless device. By now many operating systems have wireless LAN software included. Integrated wireless devices sometimes use the operating system's wireless LAN software.

Installing a Wireless LAN Device

If you need to use a separate wireless LAN device because you do not have one integrated, then install the wireless LAN device in the computer along with the corresponding wireless LAN software. Please take note of the instructions in the documentation of the device.

Transferring Wireless LAN Security Settings

The values for wireless LAN security preconfigured in the FRITZ!Box have to be transferred to the wireless LAN device.



The values preset in the FRITZ!Box are printed on the sticker attached to the bottom of housing. If you would like to establish a wireless LAN connection using these values, then your wireless LAN device must support the preset encryption method. If this is not the case, first change the settings in the FRITZ!Box. To do this, connect your computer and the FRITZ!Box using a network cable.

1. Start the wireless LAN software.
2. The following table presents the values that are possible for the connection between the FRITZ!Box and the wireless LAN device. Enter in the wireless LAN software the

values set in the FRITZ!Box. If you changed the preconfigured values in the FRITZ!Box, then enter these changed values in the wireless LAN software.

SSID (name of the wireless radio network)	FRITZ!Box 3272
Encryption method	WPA2 (AES-CCMP)
Encryption	WPA2-PSK (AES)
Key	The key is printed on the sticker attached to the bottom of housing.
Network mode	Infrastructure

3. Confirm your entries using the relevant button in the user interface (for instance, “OK” or “Connect”).

Now your wireless LAN device and the FRITZ!Box are connected with each other wirelessly.

If the Wireless LAN Device Does Not Support WPA

If your wireless LAN device does not support WPA encryption, you must convert the encryption set in the FRITZ!Box to WEP. For this you must change the wireless LAN settings in the FRITZ!Box.

1. Connect the FRITZ!Box and the computer using the network cable (yellow) (see the section Connecting Computers to the LAN Port on page 17).
2. Open the FRITZ!Box user interface (see the section Opening the User Interface on page 26).
3. Select the “WLAN / Security” menu.
4. Then select WEP encryption and enter a network key.
5. Click the “Apply” button.

 A window is displayed with the wireless LAN security settings.
6. Make a note of the settings or print out the page.

7. Close the user interface and clear the connection between the FRITZ!Box and the computer. Remove the network cable (yellow).
8. Configure your wireless LAN device with the security settings entered in the FRITZ!Box.

The wireless LAN connection between your wireless device and the FRITZ!Box will be established.



We strongly recommend using a wireless LAN device that supports WPA or WPA2 (for instance, a FRITZ!WLAN USB Stick from AVM). WEP is out of date and data encrypted with WEP can be deciphered within minutes.

6 The FRITZ!Box User Interface

The FRITZ!Box has a user interface you can open in a web browser on your computer.

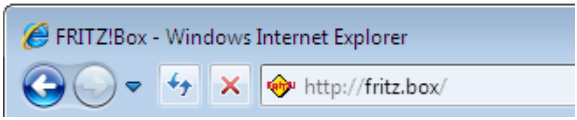
In the user interface you can set up the FRITZ!Box, enable or disable functions and receive information on the FRITZ!Box and on your connections.

6.1 Opening the User Interface

The FRITZ!Box user interface can be opened on every computer connected with the FRITZ!Box.

1. Start a web browser on your computer.
2. Enter fritz.box in the address line of the browser.

 The FRITZ!Box user interface opens.



Entering the address fritz.box in the browser

If the user interface does not open, see the instructions on resolving errors in the section from page 113.

6.2 Overview: Everything at a Glance

All important information about the FRITZ!Box is displayed directly on the “Overview” page of the FRITZ!Box user interface.

By clicking the linked entries or “more...” you can jump from this page to the corresponding menus and configure settings there.

In the upper area of the window the FRITZ!Box is displayed with its complete product name, the currently installed version of FRITZ!OS , and its current energy consumption.

Depending on your settings, the following additional information is displayed here:

- If you assigned an individual name for your FRITZ!Box (see page 86), this name will be displayed here.
- If you use the automatic search for updates (page 58) and a new FRITZ!OS version is available on the AVM Update Server for your FRITZ!Box, you will be notified.

In the **middle** area of the window information is presented about connections, ports, and configured convenience functions.

In the **lower** are of the window this information is rounded out with the list of connected devices.

6.3 Configuring FRITZ!Box with the Wizards

The FRITZ!Box puts a number of Wizards at your disposal to assist you in setting up your FRITZ!Box. You will be guided through dialogs and menus step by step.

The Wizards can be found in the “Wizards” area of the user interface.

Using the Wizards

The following Wizards assist you in setting up the FRITZ!Box step by step:

- The “Save Settings” Wizard

 Save the settings you configured on your FRITZ!Box permanently on your computer, or restore the previous settings.

- The “Update Firmware” Wizard

 This Wizard checks whether new firmware is available for your FRITZ!Box and installs it automatically if desired (see page 55).

- The “Check Internet Connection” Wizard

 This Wizard assists you in checking and configuring your Internet connection (see page 32).



When you open the FRITZ!Box user interface for the first time, a Wizard starts to assist you in configuring the FRITZ!Box. You can configure your FRITZ!Box without its assistance.

6.4 Standard View and Advanced View

The FRITZ!Box user interface has two views: the standard view and the advanced view.

Upon delivery, the FRITZ!Box interface is set to display the standard view. In the standard view all of the settings required for everyday operation of the FRITZ!Box are at your disposal. Some pages and areas of the FRITZ!Box user interface are not displayed.

In the advanced view additional settings options appear under various menus and commands. The expanded menu items contain network and DSL settings for advanced users and are not required for normal FRITZ!Box operation.



Enabling this option is recommended only if you have advanced network expertise. When this view is selected, settings can be configured which have the result that the FRITZ!Box user interface can no longer be opened.

Fast Switching between the Views

The “View” link in the footer of the FRITZ!Box allows you to switch instantly between the standard view and the advanced view.

6.5 Saving the FRITZ!Box Settings

All of the settings you configure in your FRITZ!Box can be saved in a backup file on your computer. With this backup file you can restore your settings to the FRITZ!Box at any time or load your settings to another FRITZ!Box.

Saving the Settings with the Wizard

1. Open the FRITZ!Box user interface (see page 26).
2. Click “Wizards” in the menu.
3. Click “Save Settings”.

 The “Save Settings” Wizard is started.
4. Select the option “Save settings” and then click “Next”.

5. Enter a password of your choice in the “Password” field and then click “Save Settings”.



A password must be entered only if you would like to transfer the settings of this FRITZ!Box to another FRITZ!Box.

6. In the next windows, confirm that the backup file should be saved by clicking “OK”.

Click “Next” to conclude the backup of your settings.

Saving, Restoring, Applying Settings

To save and restore your FRITZ!Box settings without a Wizard, use the “System / Save Settings” menu in the user interface. Here you can

- save your FRITZ!Box settings on the “Save” tab.
- restore all of your saved settings to the same FRITZ!Box on the “Restore tab”.
- load all of your saved settings to another FRITZ!Box of the same model on the “Restore tab”.
- load your saved settings to another FRITZ!Box model on the “Apply” tab. In this case you can select which settings are to be applied to the FRITZ!Box.



To load your saved settings to another FRITZ!Box of the same model, or to apply the settings of another FRITZ!Box model to your FRITZ!Box, the backup file must always be password-protected.

Saving settings

1. Open the “System / Save Settings” menu.

 Depending on the browser you use and how it is configured, while saving either you can specify a location for storage, or automatically have the backup file saved to a certain download folder.

2. Enter a password of your choice in the “Password” field.



A password must be entered only if you would like to transfer the settings of this FRITZ!Box to another FRITZ!Box.

3. Click “Save” and save the “FRITZ!Box[...].export” file on your computer or on another storage medium.

This concludes the saving of your FRITZ!Box settings.

Restore Settings



When settings from a backup file are restored, all of the current settings of the FRITZ!Box are overwritten.

1. Open the “System / Save Settings” menu.
2. Switch to the “Restore” tab.
3. If you saved the backup file with a password, enter this password in the “Password” field.

 The backup file from another FRITZ!Box can be loaded only if the backup file was protected with a password.
4. Click “Select File” and select the backup file entitled “FRITZ!Box‹...›.export”, which you saved at an earlier point in time.
5. Then click the “Restore” button.

 All of the settings from the backup file are loaded to the FRITZ!Box. Then the FRITZ!Box will be restarted.

After the restart you will be automatically redirected to the FRITZ!Box “Overview” page.

Apply settings



If you apply settings from a backup file, the current settings of the FRITZ!Box will be overwritten! Exception: Port forwarding settings are not overwritten. If you apply port forwarding settings, they will be added to the port forwarding settings already configured.

1. Open the “System / Save Settings” menu.
2. Switch to the “Apply” tab.

3. Enter the password.
4. Click “Browse” and select a backup file.
5. Click “Source File”.

 When the backup file is loaded you will receive an overview of all settings that you can apply to the FRITZ!Box.



Settings that do not match your FRITZ!Box or which are already configured in your FRITZ!Box will not be offered for application.

6. Select from the list the settings to be adopted.
7. Click “Apply”.

 The selected settings are loaded to the FRITZ!Box.

After the settings have been applied, the FRITZ!Box must be restarted.

7 Configuring an Internet Connection in the FRITZ!Box

Once you have connected the FRITZ!Box to your Internet connection, you must configure the Internet connection in the FRITZ!Box user interface so that the FRITZ!Box can establish the connection to your Internet service provider and connect to the Internet.

The sequence and number of steps required to configure your Internet connection depend on the kind of connection, the desired operating mode, and the Internet service provider.

7.1 Configuring an Internet Connection for DSL

Enter the Internet account information you received from your DSL/Internet provider. These data are required to configure the Internet connection.



Your Internet service provider also supplied information about the configuration of your Internet connection. Always perform the Internet connection setup as described by your provider.

Configuring an Internet Connection Automatically

If your Internet service provider arranges for the service of automatically configuring your Internet connection, the automatic configuration will be performed right after the FRITZ!Box is connected. No additional settings for the Internet connection have to be configured in the FRITZ!Box. To start automatic configuration, some providers require that you enter a start code.

Configuring an Internet Connection Using the Wizard

1. Open the FRITZ!Box user interface (see page 26).
2. Select the “Wizards” entry in the menu.
3. Click the “Check Internet Connection” Wizard and follow the instructions.

When the Wizard is finished, your Internet connection has been configured.

Configuring an Internet Connection without the Wizard

Choose this method if the FRITZ!Box is connected to a DSL modem or a DSL router, or integrated into an existing network.

1. Open the FRITZ!Box user interface (see page 26).
2. On the “Overview” page, select the “Advanced View”.
3. Select the “Internet / Account Information” menu and enter your account information.

Also take advantage of the Help available in the FRITZ!Box user interface.

7.2 Configuring the Internet Connection for Cable

With an additional cable modem you can also use your FRITZ!Box 3272 on a cable connection. Then the Internet connection is established and controlled by the FRITZ!Box itself, so that in this operating mode, too, all FRITZ!Box functions (like Internet telephony, firewall) are available without restriction.

1. Open the FRITZ!Box user interface (see page 26).
2. Select “Wizards” in the menu.
3. Click the “Check Internet Connection” Wizard and follow the instructions.

7.3 Configuring an Internet Connection for the Mobile Network

With a USB modem you can also establish the Internet connection with your FRITZ!Box 3272 via the mobile communications network. A USB modem for mobile Internet access (UMTS/HSPA) and a SIM card from a mobile communications provider are required for this. The FRITZ!Box supports UMTS/HSPA modems from various manufacturers.

1. Insert the USB modem in the USB port on the FRITZ!Box.
2. Open the FRITZ!Box user interface (see page 26).

 In the “Internet” menu, the sub-menu “Mobile Communications” is displayed.

The “Mobile Communications” menu is not available until the UMTS/HSPA modem has been connected to the USB port of the FRITZ!Box.

3. Select the setting “Mobile connection enabled”.
4. Configure the settings for your Internet connection over the mobile communications network. For more information, see the Online Help of the FRITZ!Box.

When the mobile communications function is used, the FRITZ!Box user interface presents information about network availability, connection status and throughput.

Once this function has been set up, the “Internet / Mobile Communications” menu is always available, even when the USB modem has been disconnected.

Due to technical limitations on the part of the mobile communications network providers, some restrictions may arise for Internet telephone calls and for applications requiring an incoming connection. The same is true for using port forwarding, sharing USB storage memory, remote access via HTTPS, dynamic DNS and VPN. Contact your network provider for details on any restrictions that may apply.

7.4 Configuring the Internet connection over LAN 1: FRITZ!Box as a router

You can use the FRITZ!Box at an already existing Internet access via the LAN 1 socket. To do this the FRITZ!Box is connected to the router or network. For this kind of connection the FRITZ!Box can be configured as an independent router or as an IP client in the existing network.

Configuring FRITZ!Box as a Router

You can configure the FRITZ!Box to work as an independent router to provide a network with its own network address range.

1. Connect the FRITZ!Box to the router / network with a cable as described in section Connecting with a Router/Network on page 16.
2. Open the FRITZ!Box user interface.

3. Select the “Internet / Account Information” menu.
4. Select the “Existing connection over LAN” entry from the “Internet Service Provider” drop-down list.
5. Click “Apply”.



When the settings are applied the network address range of the FRITZ!Box changes automatically.

The FRITZ!Box is configured as a router and the network range is changed. The FRITZ!Box, along with the connected network devices, forms its own self-contained network.

Configuring FRITZ!Box as an IP Client

You can configure the FRITZ!Box such that it is integrated into the existing network as an IP client and shares the existing Internet connection in the network.

1. Connect the FRITZ!Box to the router / network with a cable as described in section Connecting with a Router/Network on page 16.
2. Open the FRITZ!Box user interface.
3. Select the “Internet / Account Information” menu.
4. Select the “More Internet service providers” entry from the “Internet Service Provider” drop-down list.
5. Select the “Other Internet Service Provider” entry from the second drop-down list.
6. From the “Connection” area, select the “External modem or router” option.
7. In the “Operating Mode” area, select the setting “Share existing Internet connection in the network (IP client mode)”.

The FRITZ!Box is integrated into the existing network as an IP client. The FRITZ!Box and the connected network devices receive an IP address from the IP address range of the existing network. The FRITZ!Box and the connected network devices are thus part of this network.

7.5 Surfing the Net

Once you have set up the Internet connection in your FRITZ!Box, you can surf the Internet with any computer connected to the FRITZ!Box.

1. Start a web browser on your computer.
2. Enter in the address field the URL of the web page you would like to visit, for instance avm.de/en.

The requested Internet page is opened and displayed.

8 Password Protection: Security for the FRITZ!Box

The password protection for the user interface is a security feature of your FRITZ!Box. This section describes how to use a password for the FRITZ!Box user interface and why you should use password protection. For more information on safe handling of the FRITZ!Box, see the AVM web site at avm.de/en/Security.

The FRITZ!Box Password and FRITZ!Box Users

The FRITZ!Box password protection has two levels.

- The basic method of logging in to the FRITZ!Box is to enter the FRITZ!Box password.
 - Define a password specific to this device, which will be requested every time the user interface is opened.
 - For instructions on setting up the FRITZ!Box password, see the section A single FRITZ!Box Access for All Users from page 39.
- For more specialized application areas you can also set up FRITZ!Box users.
 - For each user account you define which contents of the FRITZ!Box the given user is allowed to access.
 - To open the FRITZ!Box user interface, a FRITZ!Box user uses the user-specific password.
 - The FRITZ!Box user interface can be accessed from the Internet only by users who have a user account.
 - For instructions on setting up FRITZ!Box users, see the section Individual Access for Each FRITZ!Box User from page 40.

Selecting the Appropriate Password Protection

Use the table below to compare the two FRITZ!Box login methods and decide which is appropriate for you:

Features	FRITZ!Box Password	FRITZ!Box User
Password	One shared password for all users.	Every user uses his own password.
Access to contents of the FRITZ!Box user interface	Every user can view and change all contents and settings	A user can view and change only the contents and settings for which he is authorized. For more information about which rights you can set up in a user account, see the section starting on page 43.
The FRITZ!Box user interface can be opened from the home network	Yes.	Yes.
	You can access the FRITZ!Box user interface from devices that are connected with the FRITZ!Box in the home network.	
The FRITZ!Box user interface can be opened via an Internet connection	No. In addition to the FRITZ!Box password, you can also create a FRITZ!Box user account for any user. This user then needs his FRITZ!Box user name and his personal password in order to access the FRITZ!Box from the Internet.	Yes. A FRITZ!Box user account is required to access the FRITZ!Box from the Internet.

Using a Secure Password

Regardless of whether you use the FRITZ!Box password or a FRITZ!Box user account to log in to your FRITZ!Box, be sure to use a password that fulfills the following criteria:

- Assign a password that's easy for you to remember.
- Use a password with at least eight characters, which includes capitals and lower-case letters as well as numerals and special characters.

 See "Characters for Passwords" in the Online Help of the FRITZ!Box user interface for more information about which characters you're allowed to use.
- Be sure to keep your password in a safe place! If you lose it, you will have to restore the factory settings to the FRITZ!Box and all of your personal settings will be lost (see page 47).

8.1 A single FRITZ!Box Access for All Users

The basic method of logging in to the FRITZ!Box user interface is to enter the FRITZ!Box password. With this password all users can open the user interface and access all of the FRITZ!Box's contents and settings.

Setting Up the FRITZ!Box Password

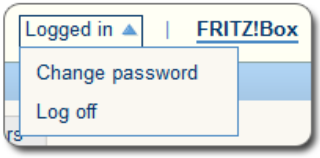
1. In the FRITZ!Box user interface, open the "System / FRITZ!Box Password / Login from Home Network" menu.
2. Select the option "Login with the FRITZ!Box password".
3. In the "FRITZ!Box password" field, enter the password you specified. See the Online Help for the user interface for more information.
4. Save your changes by clicking "Apply".

 You will be directed to the welcome screen of your FRITZ!Box.
5. Enter your user name to log in to the user interface of your FRITZ!Box.

Password protection is enabled in your FRITZ!Box.

Quick Access to the Login Data

At the top of the FRITZ!Box user interface is a navigation bar that allows users to switch between the views of the FRITZ!Box. If you use the FRITZ!Box password, you will see the entry “Logged in” on the left of the window.



Click on the blue triangle to open a drop-down menu that offers easy access to the basic functions of your FRITZ!Box:

- Change password

 Select this entry to change the FRITZ!Box password.

- Log off

 Select this entry if you would like to leave the FRITZ!Box user interface. Log off of the FRITZ!Box before you surf the web with your browser.

 If you do not click on the FRITZ!Box user interface for a period of longer than sixty minutes, you will be logged off automatically.

8.2 Individual Access for Each FRITZ!Box User

If you would like to access your FRITZ!Box from the Internet, you have to configure password-protected login with FRITZ!Box user accounts. Also use this login method if multiple users with different rights are to have access to the FRITZ!Box.

A FRITZ!Box user reaches the user interface of the FRITZ!Box by entering his personal password. There he can view and change those contents or settings for which he has been granted access rights.

Setting Up FRITZ!Box Users

You can set up as many as 32 user accounts in the FRITZ!Box.



Before you can select the “Login with FRITZ!Box user name and password” method in the “System / FRITZ!Box Password / Login from Home Network” menu, you have to set up a FRITZ!Box user with the right to configure the FRITZ!Box.

Setting Up FRITZ!Box Users with Configuration Rights

1. In the FRITZ!Box user interface, open the “System / FRITZ!Box Password / FRITZ!Box Users” menu.
2. Click the “Add User” button.
3. Enter a name, a valid e-mail address and a password for the new user. See the Online Help for the user interface for more information.
4. Specify whether or not the new FRITZ!Box user is allowed to use the FRITZ!Box contents for which he has access rights from the Internet.

 Keep in mind that a corresponding service must also be enabled in the FRITZ!Box for Internet access. For more information, see the section page 43.
5. In the “Rights” section, specify for each FRITZ!Box user which FRITZ!Box contents he is allowed to use.

 For comprehensive information about rights, read from page 43.
6. Save your entries by clicking “OK”.

 The FRITZ!Box user account has been set up.
7. Switch to the “Login from Home Network” tab and select “Login with FRITZ!Box user name and password” option. Confirm your selection by clicking “Apply”.

 You will be directed to the welcome screen of your FRITZ!Box.
8. Select your user name and enter the corresponding password to log in to the user interface of your FRITZ!Box.

Password protection is enabled in your FRITZ!Box.

Setting Up More FRITZ!Box Users

1. In the FRITZ!Box user interface, open the “System / FRITZ!Box Password / FRITZ!Box Users” menu.

 An alphabetical list of the FRITZ!Box user accounts will be displayed. Click the buttons after each list entry to view,  change, or  delete the corresponding user account.

2. Click the “Add User” button.

3. Enter a name, a valid e-mail address and a password for the new user.

 The Online Help of the user interface presents comprehensive information on all of the settings.

4. Specify whether or not the new FRITZ!Box user is allowed to use the FRITZ!Box contents for which he has access rights from the Internet.

 Keep in mind that a corresponding service must also be enabled in the FRITZ!Box for Internet access. For more information, see the section Accessing the FRITZ!Box from the Internet from page 43.

5. In the “Rights” section, specify for each FRITZ!Box user which FRITZ!Box contents he is allowed to use.

 For comprehensive information about rights, read from page 43.

6. Save your entries by clicking “OK”.

The FRITZ!Box user account has been set up.



Do not create any user accounts for users (like guests, for example) whom you would like to grant Internet access over your FRITZ!Box temporarily. Use the guest access of the FRITZ!Box instead, over wireless LAN (page 78) or over LAN (page 96). With guest access users can surf the web, but have no access to your FRITZ!Box or your home network.

Rights for FRITZ!Box Users

Read here which contents of the FRITZ!Box the user can access with which rights.

- FRITZ!Box configuration

 After logging in from the home network, with these rights the user can open the fritz.box or view of the FRITZ!Box user interface. Here he can see and edit all settings. Configuration rights automatically include the right to access voice messages, faxes, FRITZ!App Fon and the call list.

 A registered user can not revoke these rights himself and cannot disable his own account.

- Voice messages, faxes, FRITZ!App Fon and call list

 After logging in from the home network, with these rights the user can open the fritz.box view. There he can view the contents of faxes and the call list and FRITZ!App Fon and listen to voice messages.

- Access to NAS contents

 After logging in from the home network, a user with these rights can open the FRITZ!Box user interface. Here he can view the contents for which he has read rights and - if he has write rights as well - edit these contents.

 Access to NAS contents can be granted for all storage media available on the FRITZ!Box or for one selected directory.

Accessing the FRITZ!Box from the Internet

To be able to access your FRITZ!Box from the Internet, the following conditions must be fulfilled:

- You have set up a MyFRITZ! account (see page 49). Your FRITZ!Box is registered with this MyFRITZ! account.
- The option “Access from the Internet permitted” is enabled in your user account.

- The option “ Internet access to the FRITZ!Box via HTTPS enabled” is selected in the “Internet / MyFRITZ!” menu, or in the “Internet / Permit Access / FRITZ!Box Services” menu.

 When the MyFRITZ! service is enabled this checkmark is set automatically.

A FRITZ!Box user who has been granted Internet access can use the MyFRITZ! (myfritz.net) service to access the corresponding FRITZ!Box from any location. From the Internet he can reach only those FRITZ!Box contents he can also access from the home network.

For more information about MyFRITZ!, see the chapter MyFRITZ!: Global Access to the FRITZ!Box from page 49.

For more information about HTTPS see the chapter Access from the Internet via HTTPS, FTP and FTPS from page 66.

How to Use FRITZ!Box User Accounts

- Using your personal FRITZ!Box user account with all rights you can control your FRITZ!Box at home from anywhere, and also view contents and download what you need.
- If you set up a FRITZ!Box user account for every member of the family, with at least the rights to access voice messages, faxes, FRITZ!App Fon and the call list, the entire family can listen to the answering machine or view the call list even when they're away from home.
- With a FRITZ!Box user account that has only the right to access a certain area of the NAS you can grant your friends Internet access to your latest vacation pictures, for instance.

Preconfigured FRITZ!Box User: ftpuser

The first time you open the overview of user accounts under “System / FRITZ!Box Password / FRITZ!Box Users”, the user “ftpsuser” is already listed.

This is because the FRITZ!NAS service, in which the storage media connected with the FRITZ!Box are summarized, can also be accessed over the SAMBA and FTP protocols. If you access FRITZ!NAS via Windows file sharing or an FTP client, your users must be authenticated by entering “ftpuser”.

The preconfigured user account ensures smooth access to FRITZ!NAS over SAMBA and FTP. Therefore it is important not to delete or rename this user.

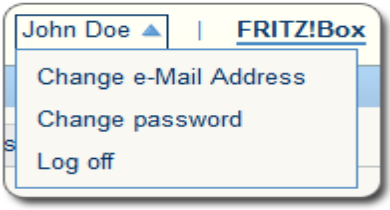
If you use only the login method with FRITZ!Box user name and password to access your FRITZ!Box, you cna also set up a user account with NAS access rights.



Only if you **always** use your FRITZ!Box user account to access the FRITZ!Box, be it from home or via the Internet, can you delete the preconfigured “ftpuser” account. In every other case deleting this user account will make it impossible to use the NAS services of the FRITZ!Box, or allow only restricted use.

Quick Access to Your Own User Account

At the top of the FRITZ!Box user interface is a navigation bar that allows users to switch between the views of the FRITZ!Box they are authorized to use. Displayed on the left is the name of the FRITZ!Box user account with which the user is currently logged in to the user interface.



Click on the blue triangle to open a drop-down menu that offers access to the basic functions of this user account:

- Change e-mail address

 Select this entry to assign a different e-mail address to the current user account.

- Change password

 Select this entry to change the password of the current user account.

- Log Off

 Select this entry if you would like to leave the FRITZ!Box user interface. Log off of the FRITZ!Box before you surf the web with your browser.

 If you do not click on the FRITZ!Box user interface for a period of longer than sixty minutes, you will be logged off automatically.

Disabling FRITZ!Box Users

You can disable a user account without deleting it. The owner of a disabled account can no longer access the FRITZ!Box contents.



You can neither delete nor disable the user account with which you are currently logged in to the user interface of your FRITZ!Box.

1. In the FRITZ!Box user interface, open the “System / FRITZ!Box Password / FRITZ!Box Users” menu.
2. Click the “Edit” button for the user account to be disabled.
3. In the “Users” section, remove the checkmark in front of the “User account enabled” option.
4. Save your settings by clicking “OK”.

The user account has been disabled.

8.3 Forgotten Password: What To Do

If you have forgotten your password for the user interface, for reasons of security, you have to restore the factory settings to your FRITZ!Box.

This will discard all of your settings. Afterwards you will have to reconfigure your Internet connection and all personal network and network device settings.

Here is how to restore the factory settings to the FRITZ!Box:

1. Disconnect the FRITZ!Box from the power supply.
2. Reconnect to the power supply after about five seconds and wait until the “Power” LED lights up.

 In the first ten minutes after restarting you can restore the factory settings to the FRITZ!Box.
3. Open the browser on a computer connected with the FRITZ!Box by wireless LAN or LAN and enter fritz.box in the address field.
4. In the “Welcome to your FRITZ!Box” window, click underneath the password query on “Forgot password?” and follow the instructions on the screen.

 The FRITZ!Box is reset to the factory settings and then restarted. Afterwards you can once again access the FRITZ!Box user interface.
5. After restarting, reconfigure the FRITZ!Box over the user interface or load your saved settings to the FRITZ!Box (see page 28).

This concludes the reset of the FRITZ!Box.

8.4 Using the FRITZ!Box without a Password

From within the home network you can operate the FRITZ!Box user interface without enabling password protection. This means that every user who accesses the interface of your FRITZ!Box can view and change all information and settings.

In the “No login” mode, your private information is not sufficiently protected from malicious programs or unwelcome activities. Therefore we urgently advise against using the FRITZ!Box without password protection!



Protect your FRITZ!Box by defining a password for the FRITZ!Box user interface.

To do this, go to the “System / FRITZ!Box Password / Login in from the Home Network” and select one of the password protection methods.

For comprehensive information about logging in to the FRITZ!Box with a password, see the sections Individual Access for Each FRITZ!Box User from page 40 and A single FRITZ!Box Access for All Users from page 39.

9 MyFRITZ!: Global Access to the FRITZ!Box

MyFRITZ! is a web service by AVM, with which you can access your FRITZ!Box from anywhere in the world over the Internet, just as if you were at home. This chapter describes what MyFRITZ! does and how to configure MyFRITZ!.

Using FRITZ!Box from On the Go

Using the web browser of any computer, tablet or smartphone, accessing your FRITZ!Box from anywhere is safe and simple. The following data are accessible:

- FRITZ!NAS: Photographs, music and documents located on the storage media connected to the FRITZ!Box are available anywhere via MyFRITZ!.

 With MyFRITZ! and FRITZ!NAS your FRITZ!Box offers a “personal cloud service” in which all of your data are located safely at home. Data transmission is encrypted; see page 54.

- FRITZ!Box user interface: With MyFRITZ! you can open the user interface of your FRITZ!Box from anywhere and configure settings.

Exactly which data are available to you depends on the settings in your FRITZ!Box user account (see page 43).

9.1 Configuring MyFRITZ!

The MyFRITZ! service can be used only with a MyFRITZ! account. Register your FRITZ!Box to receive a MyFRITZ! account. For instructions, see the Setting Up a MyFRITZ! Account from page 50 section.

Once your FRITZ!Box is registered with your MyFRITZ! account, the FRITZ!Box determines the public IP address each time it is changed and conveys it to the MyFRITZ!. The FRITZ!Box can be reached at this IP address in the Internet from anywhere in the world. When you log in to MyFRITZ! you will be forwarded to the FRITZ!Box using the IP address.

Setting Up a MyFRITZ! Account

To set up a MyFRITZ! account, use a computer that fulfills the following requirements:

- The computer is connected with the Internet.
- You can access to your e-mail on this computer.

Set up the MyFRITZ! account in the FRITZ!Box user interface:

1. Open the FRITZ!Box user interface (see page 26).
2. Select “Internet / MyFRITZ!”.
3. Select “Create new MyFRITZ! account”.
4. Enter your e-mail address.



If you already have a FRITZ!Box user account, enter here the e-mail address you use for the user account.

5. Assign a secure MyFRITZ! password that’s easy for you to remember. Note the following:

 Use a password with at least eight characters, which includes capitals and lower-case letters as well as numerals and special characters.

 See “Characters for Passwords” in the Online Help of the FRITZ!Box for more information about which characters you're allowed to use.

 When a password is defined it is displayed in clear text. Once it has been saved, every time it is entered it will be displayed encoded.

6. If you do not have a FRITZ!Box user account yet, you will be prompted to set one up by assigning a user name and an additional password. For security reasons access to the FRITZ!Box from the Internet is possible only for users with a FRITZ!Box user account.

 If you already have a FRITZ!Box user account, your MyFRITZ! registration will be linked with your user account.

 Follow the instructions displayed in the FRITZ!Box user interface.

7. You receive an e-mail from MyFRITZ! containing a registration link. If possible, open the e-mail on the computer on which you began setting up the account. Click the registration link.
8. You are forwarded to the MyFRITZ! website, where you are prompted to read the terms of use and activate the account.

Once the account has been activated successfully, you will be redirected to your FRITZ!Box user interface.

Now the FRITZ!Box is registered with your MyFRITZ! account. On the MyFRITZ! page of the FRITZ!Box user interface the options “MyFRITZ! enabled for this FRITZ!Box” and “ Internet access to the FRITZ!Box via HTTPS enabled” are selected.

Click on “Refresh status” if the status of your MyFRITZ! account is not yet marked with a red icon.

9.2 Using MyFRITZ!

As soon as you have created a MyFRITZ! account and registered your FRITZ!Box with the account, you can begin using the MyFRITZ! service.

You can reach your FRITZ!Box from anywhere by opening the myfritz.net web site in any web browser.

If you use a smartphone or a tablet, the MyFRITZ!App by AVM offers you simple access to your FRITZ!Box at home.

MyFRITZ! in the Web Browser

1. Open the myfritz.net website.
2. Log in with your e-mail address and your MyFRITZ! password.
3. Click the “To My FRITZ!Box” button.
4. To register with your FRITZ!Box, enter the data of your FRITZ!Box user account.

You will be directed to the MyFRITZ! page of your FRITZ!Box.

If you have enabled the right to access FRITZ!NAS for FRITZ!Box user account you are using, via the MyFRITZ! page you can access the storage media you released for sharing.

MyFRITZ! over a Smartphone or Tablet

With the MyFRITZ!App from AVM you can use the MyFRITZ! web service on the following devices:

- Android smartphones or Android tablets with Google Android 2.2 or later
- iPhone (model 3GS or later) or iPod touch (3rd generation or higher) or iPad with iOS 5.0 or later.

The MyFRITZ!App is available from the Google Play Store and the Apple App Store.

For more information, tips and information on the apps from AVM, go to avm.de/en/fritzapps.

During configuration your smartphone or tablet must be connected with the FRITZ!Box over wireless LAN. After setup you can use the MyFRITZ!App no matter whether you're at home or on the go.

1. Load the MyFRITZ!App suitable for your smartphone to the device.
2. Connect your smartphone or tablet with your FRITZ!Box via wireless LAN.
3. Open the MyFRITZ!App.
4. To register with your FRITZ!Box, enter the data of your FRITZ!Box user account. These are your e-mail address or your FRITZ!Box user name plus the corresponding password.

You will be directed to the MyFRITZ! page of your FRITZ!Box.

If you have enabled the right to access FRITZ!NAS for FRITZ!Box user account you are using, via the MyFRITZ! page you can access the storage media you released for sharing.

MyFRITZ! in the Home Network

You can also use MyFRITZ! in the FRITZ!Box home network.

1. Enter in the address field of your browser.
2. Log in to your FRITZ!Box.

 Depending on the registration method you set for the home network, you must enter the FRITZ!Box password or the user name and the password of the FRITZ!Box user account.

You will be directed to the MyFRITZ! page of your FRITZ!Box. In this case you no registration with MyFRITZ! is required.

If you registered with the FRITZ!Box password, you now have access to all of the contents stored on your FRITZ!Box.

If you registered using the information for your FRITZ!Box user account, the MyFRITZ! page will show those contents of your FRITZ!Box to which you have access rights.

Mulitple FRITZ!Boxes

You can register multiple FRITZ!Boxes at one MyFRITZ! account.

- Every FRITZ!Box is registered with the MyFRITZ! account over its own user interface.

 From the “Internet / MyFRITZ!” menu, select the setting “Register the FRITZ!Box with an existing MyFRITZ! account”.
- When you log in to MyFRITZ!, all registered devices will be displayed.

9.3 Security with MyFRITZ!

For the following MyFRITZ! activities the https security protocol is used:

- setting up a MyFRITZ! account with myfritz.net.
- registration of the FRITZ!Box with the MyFRITZ! account.
- accessing the MyFRITZ! page of your FRITZ!Box over myfritz.net.
- accessing the user interface of the FRITZ!Box.



The FRITZ!Box generates its own https certificate. Because this certificate does not come from a certification authority preconfigured in common browsers, you have to confirm that the connection should be established nevertheless.

The HTTP protocol is used to update the IP address on myfritz.net each day. The password is never transmitted as clear text.

For further details on the HTTPS and HTTP protocols, see the section Access from the Internet via HTTPS, FTP and FTPS from page 66.

10 Firmware Update: Updating FRITZ!OS

AVM provides regular free updates of the firmware for your FRITZ!Box. This software—called FRITZ!OS—controls all of the FRITZ!Box functions. Firmware updates contain further developments of existing FRITZ!Box functions and often also introduce new functions for your FRITZ!Box.

Select one of the methods described below to install new firmware on your FRITZ!Box.

10.1 Performing an Update with the Wizard

The Wizard checks whether new firmware is available for your FRITZ!Box and installs it automatically if desired.

Performing a Firmware Update

1. Open the FRITZ!Box user interface (see page 26).
2. Click “Wizards” in the menu and start the “Update Firmware” Wizard.

 The Wizard checks whether a FRITZ!OS update is available for your FRITZ!Box.

 If the Wizard finds an update, it displays the version number of the new FRITZ!OS. Click the link under the FRITZ!OS version to view information about further developments and new functions contained in the FRITZ!OS update. Read this information before starting the update.
3. To transfer the FRITZ!OS update to the FRITZ!Box, click “Start Firmware Update Now”.

 The FRITZ!OS update begins and the “Info” LED on the FRITZ!Box starts flashing.



Never clear the connection between FRITZ!Box and the computer during a firmware update, and do not unplug the power cord, as interrupting the firmware update could damage your FRITZ!Box.

The firmware update is complete when the “Info” LED stops flashing.

10.2 Performing an online update

With the “Online Update” function you can install the current firmware version for your FRITZ!Box quickly and conveniently.

Performing a Firmware Update

1. Open the FRITZ!Box user interface (see page 26).
2. Enable the advanced view.
3. Select “System / Firmware Update / Online Update”.
4. Click “Find New Firmware”.

 The FRITZ!Box checks whether a FRITZ!OS update is available for your FRITZ!Box.

 If a new FRITZ!OS version is available for your FRITZ!Box, the “Start Firmware Update Now” button will be displayed.
5. Click this button to start the update.

 The FRITZ!OS update begins and the “Info” LED on the FRITZ!Box starts flashing.



Never clear the connection between FRITZ!Box and the computer during a firmware update, and do not unplug the power cord, as interrupting the firmware update could damage your FRITZ!Box.

The firmware update is complete when the “Info” LED stops flashing.

10.3 Performing a Manual Update

In some cases it is not possible to perform an automatic update, for instance when the FRITZ!Box is not connected to the Internet. Then you have the option of performing a manual firmware update.

Downloading the firmware file

Before you can perform a manual firmware update, you must download an up-to-date firmware file from the Internet (using your neighbor's or friend's computer, or at an Internet café) and save it on your computer or on a connected storage medium.

1. Enter the address a web browser ftp://ftp.avm.de/fritz.box/ in your web browser.
2. Switch to the folder for your FRITZ!Box model, then to the sub-folder "firmware", and then to the folder named "english".



The complete model name of your FRITZ!Box is shown in the user interface on the "Overview" page and is also printed on the sticker on the underside of the housing.

3. Download the current firmware update for your FRITZ!Box with the file suffix ".image" to the computer.

 The currently installed firmware version is displayed on the "Firmware File" tab and on the "Overview" page. The version number of the downloaded and saved firmware is included in the file name of the *.image file.



Perform an update only if the downloaded firmware is a newer version than the firmware currently installed.

Now you can copy the firmware file to the computer that is connected to the FRITZ!Box (e.g. using a USB flash drive).

Performing a firmware update

1. Open the FRITZ!Box user interface (see page 26).
2. Enable the advanced view.
3. Select “System / Firmware Update / Firmware File”.
4. Click the “Save Settings” button to save the current settings of your FRITZ!Box on your computer and save the export file on your computer.

 A prerequisite for loading a new firmware file is that your current FRITZ!Box settings have been saved in a backup file. Using this file you can restore the settings of your FRITZ!Box as needed.
5. Click the “Browse...” button and choose the file with the new firmware you already downloaded and saved on your computer.
6. Click the “Start Update” button.

 The new firmware is transmitted to the FRITZ!Box.



Never clear the connection between FRITZ!Box and the computer during a firmware update, and do not unplug the power cord, as this interrupting the firmware update could damage your FRITZ!Box.

The firmware update is complete when the “Info” LED stops flashing.

10.4 Using the Automatic Search for Updates

With the AVM service “Search for updates automatically” you will always be informed about the latest FRITZ!OS updates for your FRITZ!Box: When a new firmware for your FRITZ!Box was found, you will be notified on the “Overview” page. From here you can then install the update.



New updates are not installed automatically.

Performing a firmware update

1. Open the “Overview” page.

 If an update for your FRITZ!Box is found, you will be notified with the message “The latest firmware is not installed: Update?”.

2. Click the “Update?” link to install the update.

3. In the next window, click “Start Firmware Update Now”.

 The FRITZ!OS update begins and the “Info” LED on the FRITZ!Box starts flashing.



Do not interrupt the power supply to the FRITZ!OS during the FRITZ!Box update!

The firmware update is complete when the “Info” LED stops flashing.

Disabling “Search for updates automatically” service

The service “Search for updates automatically” is set enabled upon delivery of the FRITZ!Box, but you can disable it if desired.

1. Open the FRITZ!Box user interface (see page 26).

2. Select the “Contents” link in the header.

 The contents page, or site map, of the FRITZ!Box user interface is opened.

3. Scroll down to the end of this page and click the “AVM Services” link.

 The “AVM Services” page is opened.

4. Disable the setting “FRITZ!Box searches for updates periodically” and save your setting with “Apply”.

The AVM service “Search for updates automatically” is now disabled.

11 FRITZ!Box as an Internet Router

The FRITZ!Box connects computers in your home network with the Internet. This chapter explains the possibilities presented by using the FRITZ!Box as an Internet router and how to take advantage of them.

11.1 Child Protection: Controlling Internet Access

Child protection is a function with which you can control the Internet use of individual computers or Windows users. You can change three factors to influence Internet use:

- Time: you can restrict the duration of Internet use each day
- Contents: you can use filtering to block access to web sites with inappropriate content
- Network applications: you can block unauthorized network applications from running

Time Restrictions, Filter Lists, Network Applications

Restricting online time

On a timetable you can define at what times and for a total of how long the Internet connection may be used on each day of the week.

For your children, for instance, you can set up the following time restriction using the timetable:

Monday and Wednesday	from 2 pm to 9 pm; no more than 3 hours each day
Tuesday, Thursday and Friday	from 6 pm to 9 pm; no more than 3 hours each day
Saturday and Sunday	from 10 am to noon; and from 4 pm to 10 pm; no more than 5 hours each day

Filtering Contents

Access to web sites with inappropriate contents can be blocked using filters. The following filtering options are available:

- Prevent HTTP queries: You can prevent HTTPS queries. HTTPS is used, for instance, to open Facebook, Gmail and online banking.
- Permit web sites with a whitelist:
 - You can create a list known as a “whitelist”, in which you include all of the web sites a user is allowed to access.
 - When a whitelist is used, only those web sites included in the list can be opened, and no others.
 - Using a whitelist is convenient if access is to be limited to just a few web sites.
- Block web sites with a blacklist:
 - You can create a list known as a "blacklist", in which you include the web sites a user is not allowed to access. This list can integrate the BPjM list of web sites with adult content issued by the German federal government.
 - No web site included on the blacklist can be opened.
 - When a blacklist is used, web pages generally can no longer be opened by entering the IP address directly. This is also true for web sites that are not included in the blacklist.
 - For applications that address web sites directly via the IP address, for instance virus scanner update software, the relevant IP addresses can be released for access by entering them in the exception list.

Block network applications

You can list network applications to be blocked for use. For instance, you can block file-sharing software.

Child Protection, Configuration

In the FRITZ!Box 3272 factory settings, unrestricted use of the Internet is set by default.

Child protection for network devices and Windows users

- Child Protection is enabled and configured for computers and other network devices individually. Child protection for network devices is independent of the operating system.
- In the Windows operating systems (Windows 8, Windows 7 and Windows XP), child protection can be also enabled and configured for each individual Windows user. Child protection for Windows users requires the service “AVM FRITZ!Box Child Protection”. This service can be downloaded for free from the AVM web site.

Setting up child protection in the FRITZ!Box

1. Open the FRITZ!Box user interface (see page 26).

 The “Internet / Filters” menu is available only if you have set up the Internet connection in the FRITZ!Box and established an Internet connection.

 The “Internet / Filters” menu is not available if you have configured the FRITZ!Box as a DSL modem or IP client. In this case, use the corresponding functions of the router whose Internet connection is being shared.

2. Select the “Internet / Filters” menu.

 The “Child Protection” menu is displayed.

3. Select a network device or a Windows user.

4. Click the  button.

 See the Online Help available in the FRITZ!Box user interface for more information.

11.2 Port Forwarding: Making Computers Accessible from the Internet

With default settings in the FRITZ!Box, programs on your computer and LAN cannot be accessed from the Internet. For applications like online games and file sharing software or server services like HTTP, FTP, VPN, terminal and remote access servers you have to make your computer accessible for other Internet users.

Port forwarding rules

Using port forwarding you allow incoming connections from the Internet. By releasing certain ports for incoming connections, you grant controlled access to the computers in your network to other Internet users.

The following port forwarding methods are possible in the FRITZ!Box:

PING	IPv4: The FRITZ!Box responds to ping inquiries from the Internet addressed to the IPv4 address of the FRITZ!Box.
	IPv6: The FRITZ!Box responds to ping inquiries from the Internet addressed to the IPv6 address of the FRITZ!Box. Additionally, you can set up PING6 port forwarding rules for each computer in the home network since each computer has its own globally valid IPv6 address.
TCP UDP	IPv4: Within IPv4 networks you can open the FRITZ!Box firewall for the protocols TCP and UDP when entering the port range. One port can be opened for exactly one computer.
	IPv6: Within IPv6 networks you can open the FRITZ!Box firewall for the protocols TCP and UDP when entering the port range. One port can be opened for each computer in the network.

ESP GRE	IPv4: Within IPv4 networks you can open the firewall for the two protocols ESP and GRE which do not use ports.
Exposed host (Open firewall completely)	IPv4: Within IPv4 networks you can open the firewall for one computer completely. This computer is then no longer protected by the FRITZ!Box firewall. If individual ports are already open for other computers, then data packets for these ports are not forwarded to the exposed host but to the other computer instead.
	IPv6: Within IPv6 networks you can open the firewall for each computer completely. These computers are then no longer protected by the FRITZ!Box firewall.

Setting up port forwarding in the FRITZ!Box

- IPv4: Port forwarding for IPv4 is set up in the “Internet / Permit Access” menu, on the “Port Forwarding” page.
- IPv6: Enable the advanced view. Port forwarding for IPv6 is also set up in the “Internet / Permit Access” menu, on the “IPv6” page.

Determining the IPv4 Address for Accessing the FRITZ!Box

If you have enabled ports for forwarding in the FRITZ!Box, other Internet users can access your computers at the IP address assigned to your FRITZ!Box by the Internet service provider. This is a public IPv4 address.

Here is how to determine the public IPv4 address of the FRITZ!Box:

1. Open any Internet page in order to establish an Internet connection.
2. Open the FRITZ!Box user interface and enable the advanced view in the user interface.

3. The FRITZ!Box's public IPv4 address is displayed on the "Overview" page in the "Connections" area.



Every time the Internet connection is interrupted the Internet Service Provider re-assigns the IP address. The IP address may change in the process. Therefore it is a good idea to use MyFRITZ! or dynamic DNS so that the IP address can always be reached under the same name. For information on MyFRITZ!, see the section MyFRITZ!: Global Access to the FRITZ!Box on page 49. For more information about dynamic DNS, see the section Dynamic DNS: Name Instead of IP Address on page 65.

11.3 Dynamic DNS: Name Instead of IP Address

Dynamic DNS is an Internet service that makes it possible for the FRITZ!Box to remain accessible from the Internet at all times under a fixed name, even though the public IP address changes.

Dynamic DNS can be used as an alternative to MyFRITZ!. Both services can be used in parallel.

You must register with a dynamic DNS provider to use this service. When you register, you agree on the fixed name (domain name) at which your FRITZ!Box should be accessible from the Internet. You also define a user name and password.

Every time the IP address changes, the FRITZ!Box transmits the new IP address to the dynamic DNS provider in the form of an update request. Then the domain name is assigned to the current IP address by the dynamic DNS provider.

Setting up Dynamic DNS in the FRITZ!Box

1. Open the FRITZ!Box user interface (see page 26).
2. Enable the advanced view.
3. Select the "Internet / Permit Access" menu.
4. Select the "Dynamic DNS" page and set up dynamic DNS. See the Online Help available in the FRITZ!Box user interface for more information.

11.4 Access from the Internet via HTTPS, FTP and FTPS

Over the Internet it is possible to access the user interface and the NAS of the FRITZ!Box. With a laptop, smartphone or tablet PC you can configure settings in the FRITZ!Box user interface, take a look at your call list, or access the NAS to download or upload files.

Prerequisites for access over the Internet

- Access to the user interface: Every user who would like to access the FRITZ!Box 3272 externally from the Internet requires a FRITZ!Box 3272 user account for which the authorization “Access from the Internet permitted” is configured.
- Access to NAS: Every user who would like to access the NAS of the FRITZ!Box externally from the Internet requires a FRITZ!Box 3272 user account for which the authorizations “Access from the Internet permitted” and “Access to NAS contents” are configured.
- The protocols for the desired access must be enabled in the FRITZ!Box.

HTTPS, FTP and FTPS

The protocols HTTPS, FTP and FTPS are used for access over the Internet.

- HTTPS (Hypertext Transfer Protocol Secure)

 HTTPS is an Internet protocol for bug-proof communication between the web server and the browser in the World Wide Web.

 Enable this protocol to allow access to the FRITZ!Box from the Internet.

- FTP (File Transfer Protocol)

 FTP is a network protocol for transmitting files in IP networks.

 Enable this protocol to allow access by FTP to the FRITZ!Box NAS from the Internet.

- FTPS (FTP over SSL)

 FTPS is a method for encrypting the FTP protocol.

 Enable this protocol to secure transmission over FTP.

Enabling HTTPS, FTP and FTPS in the FRITZ!Box

1. Open the FRITZ!Box user interface (see page 26).
2. Enable the advanced view.
3. Select the “Internet / Permit Access” menu.
4. Select the “FRITZ!Box Services” page and enable the protocols you need. For more information, see the Online Help.

11.5 Prioritization: Right of Way for Internet Access

Prioritization is a function you can use to specify that network applications and network devices be treated with higher or lower priority when they access the Internet connection. For example, you may wish to ensure that applications like IPTV and video on demand are always treated with higher priority than other applications. You can also specify that file-sharing applications like eMule and BitTorrent always have to wait behind online games.

Categories for Prioritization

There are three categories for prioritization: “Real-time applications”, “Prioritized applications” and “Background applications”. The categories are explained below.

Network applications and network devices are assigned to the categories using rules.

Real-time applications

This category is suitable for applications with high demands on transmission speed and reaction times (for example, IPTV or video on demand).

- Network applications of this category always have priority over other applications accessing the Internet at the same time.

- When the Internet connection is working at full capacity, the network packets of the applications of this category will always be sent first. In this case data from network applications assigned to other categories, like “Prioritized applications”, will be transmitted later.
- If multiple network applications are assigned to this category, then they must share the available capacity.
- Whenever Internet telephony is included in this category, this application always has the highest priority, even over other real-time applications.

Prioritized applications

This category is suitable for applications that require a fast reaction time (for example, company access, terminal applications, games).

- For network applications prioritized in this category, 90% of the FRITZ!Box’s upload bandwidth is available, as long as no application from the “Real-time applications” category requires bandwidth. The remaining 10% of the upload bandwidth is available for applications that are prioritized in lower categories or not prioritized at all.
- If multiple network applications are assigned to the “Prioritized applications” category, then they must share the available capacity.

Background applications

This category is suitable for applications that do not require any high transmission speed and which are not time-critical (for example, peer-to-peer services or automatic updates).

- Network applications assigned to this category are always treated with the lowest priority when the Internet connection is working at full capacity. So whenever an application from a different category or a non-prioritized application requires the entire bandwidth, all background applications must wait until bandwidth capacity becomes available again.

- If no other network applications are active, then the background applications receive the entire bandwidth.

Prioritization Method in the FRITZ!Box

The following algorithm is used in the FRITZ!Box to send data packets according to their prioritization:

- Change in the order in which packets are sent to the Internet (upstream direction)

 The order of the packets the FRITZ!Box receives from the Internet (downstream direction) cannot be changed.

- Discard low-priority packets in order to ensure the transmission of higher-priority packets. This algorithm is used whenever more packets are supposed to be sent to the Internet than the upstream transmission rate of the Internet connection allows.

- As long as no packets are being sent from higher-priority applications, the full transmission rate of the Internet connection is available for low-priority packets.

Setting Up Prioritization in the FRITZ!Box

1. Enable the advanced view.
2. Prioritization is set up in the “Internet / Filters / Prioritization” menu.

11.6 VPN: Remote Access to the Home Network

Via VPN a secure remote access to the network of the FRITZ!Box can be established. The VPN solution for the FRITZ!Box features the following:

- The VPN solution for the FRITZ!Box is based on the IPSec standard.
- Computer-LAN coupling and LAN-LAN coupling: VPN connections can be set up for individual remote computers or even for remote networks.
- A maximum of eight simultaneous active VPN connections is supported.

- The configuration files for the VPN connections are created using a separate program. The program is provided free of charge and can be downloaded from the AVM web site.
- A free VPN client for individual computers can also be downloaded from the AVM web site.

The AVM web site offers a Service Portal which presents comprehensive information on VPN in general and in connection with the FRITZ!Box. Visit this portal to obtain more detailed information.

avm.de/en/vpn

Setting up VPN in the FRITZ!Box

1. Open the FRITZ!Box user interface.
2. Enable the advanced view.
3. Select the “Internet / Permit Access” menu.
4. Select the “VPN” page.

See the Online Help of the FRITZ!Box to set up VPN.

Supplementary software for VPN

All of the information required for a VPN is saved in a configuration file. The terminals involved in any VPN must receive this file.

Individual computers that are networked over a VPN require a VPN client.

- “Configure FRITZ!Box VPN Connection” Wizard

 AVM provides the “Configure FRITZ!Box VPN” software for creating configuration files. This program is a Wizard that takes you step by step through the VPN configuration. All of the necessary VPN settings, like the encryption method and access rules, are set automatically. The resulting configuration files must be imported to the respective terminals of the VPN tunnel. At the terminal with the FRITZ!Box the configuration file is then imported to the FRITZ!Box. The VPN parameters in these files can be adjusted manually to connect to products by other manufacturers.

- The “FRITZ!VPN” VPN Client

 AVM offers the “FRITZ!VPN” software as a VPN client.

Both the Wizard and the client can be downloaded free of charge from the VPN Service Portal on the AVM web site:

avm.de/en/vpn

11.7 DNS Server: Freely Selectable

DNS servers are preset in the FRITZ!Box for IPv4 and IPv6.

These are the DNS servers assigned by the Internet provider.

For both IPv4 and IPv6, the preset DNS server can be replaced by a free DNS server. Free DNS servers include, for instance, OpenDNS and Google DNS.

Here is how to change the DNS server entry:

1. Open the FRITZ!Box user interface.
2. Enable the advanced view.
3. In the “Internet / Type of Connection” menu, select the “DNS Server” page.
4. Change the settings for the DNS servers.

The “DNSv6” page is displayed only if you enabled IPv6 support for the FRITZ!Box on the “IPv6” page.

11.8 DNSSEC: Security for DNS Queries

DNSSEC is short for Domain Name System Security Extensions. As the name says, this is an extension of DNS, the domain name system.

DNSSEC ensures that both the DNS server and the information returned by the DNS server are authentic, or genuine.

Security with DNSSEC

When a home user surfs the web, he sends queries to the Internet by entering URLs in the address line of the browser. A URL is the name of a web site that is easy to remember, such

as avm.de/en. Every query is sent to the DNS server first. The DNS server resolves the URL into the corresponding IP address. There is one unambiguous IP address for every URL.

The home user relies on the authenticity of the IP address returned by the DNS server. Authentic means that the response is the IP address of the desired web site, and not a faked IP address that leads to a fake web site. DNSSEC can ensure that the returned addresses are authentic.

Support with the FRITZ!Box

The FRITZ!Box supports DNSSEC queries over UDP.

The FRITZ!Box has a DNS proxy. The computers in the home network use the FRITZ!Box as a DNS server. The FRITZ!Box forwards DNSSEC queries from the home network to the Internet. The FRITZ!Box forwards DNSSEC responses from the Internet to the home network. The DNSSEC information must be validated on the computer in the home network. For this DNSSEC must be supported in the operating system.

11.9 IPv6: The New Internet Protocol

IPv6 stands for Internet protocol version 6 and is the successor to IPv4.

The FRITZ!Box supports the new IPv6 web protocol and can establish IPv6 connections:

- IPv6 support can be switched on in the FRITZ!Box user interface.
- For simultaneous use of IPv6 and IPv4, the FRITZ!Box supports Dual-Stack and Dual-Stack Lite. This means that the FRITZ!Box can communicate with both IPv4 and IPv6 domains in the Internet.
- The FRITZ!Box supports native IPv6 and IPv6 with a tunnel protocol. Native IPv6 means that your Internet service provider supports IPv6 directly on your line.

IPv6-capable Services in the Home Network

- FRITZ!NAS access via SMB or FTP/FTPS
- access to the user interface with http or https over IPv6
- The DNS resolver of the FRITZ!Box supports queries for IPv6 addresses (AAAA records) and can query the upstream DNS resolver of the Internet service provider over IPv6.
- The globally valid prefix is distributed via router advertisement.
- For guest access to the wireless LAN, the home network and its wireless guests are separated by IPv6 subnetworks.
- UPnP, UPnP AV media server
- automatic provisioning (TR-064)

IPv6-capable Services in the Internet

- FRITZ!NAS access via FTPS
- completely closed firewall to protect against unwanted data from the Internet (Stateful Inspection Firewall)
- automatic provisioning (TR-069)
- time synchronization over NTP (Network Time Protocol)
- remote access via https
- dynamic DNS via dyndns.org and namemaster.de

Setting Up IPv6 in the FRITZ!Box

1. Open the FRITZ!Box user interface.
2. Enable the advanced view.
3. Then select the “Internet / Account Information” menu.
4. Select the “IPv6” page and set up IPv6 in the FRITZ!Box. Consult the Online Help of the FRITZ!Box user interface for more information.

Setting Up IPv6 on the Computer

You can establish connections in the IPv6 range of the Internet only if IPv6 is installed and enabled on the computers in your home network.

- IPv6 is already installed and enabled in the Windows 7 and Windows Vista operating systems.
- IPv6 is not installed and enabled in standard Windows XP. You must install and enable IPv6 in order to use it. The IPv6 installation requires Service Pack 2 for Windows XP.
- IPv6 has been available in the Mac OS X operating systems since Mac OS 10.

11.10 Mobile Network: Replace Faulty DSL

Internet access over the mobile telephone network can be set up so that the mobile telephone connection is established automatically whenever the DSL connection fails. This guarantees Internet access even when the DSL connection is missing. A USB modem for mobile Internet access (UMTS/HSPA) and a SIM card from a mobile communications provider are required for this. The FRITZ!Box supports UMTS/HSPA modems from various manufacturers.

Here is how to set up the mobile telephone connection as a substitute upon DSL failure:

1. Insert the USB modem in the USB port on the FRITZ!Box.
2. Open the FRITZ!Box user interface (see page 26).

 In the “Internet” menu, the sub-menu “Mobile Communications” is displayed.

 The “Mobile Communications” menu is not available until the UMTS/HSPA modem has been connected to the USB port of the FRITZ!Box.

3. Select the setting “Automatically enable the mobile connection when the DSL connection is disrupted”.

4. Configure the settings for your Internet connection over the mobile communications network. For more information, see the Online Help of the FRITZ!Box.

Access to the Internet is now guaranteed, even when the DSL connection fails.

As soon as the DSL connection is stable and available for at least 30 minutes, the connection will be switched back to the DSL connection.

12 FRITZ!Box as a Wireless Access Point

The FRITZ!Box is a wireless access point for wireless devices like notebooks, tablets or smartphones. The FRITZ!Box can establish wireless LAN connections compliant with the fast Wireless N standard. The FRITZ!Box is preconfigured with an encryption method from today's safest method WPA2. This encryption method is supported by most of the latest wireless devices. The FRITZ!Box supports wireless LAN convenience functions like night service and WPS quick connect.

12.1 Connecting Wireless LAN Devices Securely with the FRITZ!Box

In a wireless LAN radio network security is of the utmost importance. This is why wireless LAN connections between the FRITZ!Box and your devices are encrypted. For encryption the FRITZ!Box and your wireless devices must use the same encryption method.

The FRITZ!Box is preconfigured with today's safest method WPA2. This encryption method is supported by most of the latest wireless devices.

If you would like to use wireless devices that do not support WPA2 or WPA, you can switch encryption in the FRITZ!Box to the older, less secure WEP method. You can also establish non-encrypted wireless LAN connections. However, if at all possible we recommend always establishing WPA2 wireless LAN connections.

Wireless devices can be connected with the FRITZ!Box automatically or manually. A particularly simple and secure automatic method is WPS, with which a wireless LAN connection can be established at the touch of a button. For manual wireless LAN connections with the FRITZ!Box use the wireless LAN software of your wireless device or the wireless LAN program on your computer.

Connecting Wireless Devices Automatically (WPS)

Wireless devices that support the fast connection method WPS can be connected with the FRITZ!Box automatically.

1. Start the WPS function of your wireless LAN device. Consult the documentation of the device to find out how to start WPS.
2. Within two minutes, press the WPS button on your FRITZ!Box and hold it down until the “WLAN” LED begins flashing.
3. Your wireless LAN device and the FRITZ!Box now establish a secure network connection automatically. The WLAN LED on the FRITZ!Box stops flashing and remains on.

With this, the wireless LAN connection is established. Your device is integrated into your home network and can use the Internet connection of the FRITZ!Box.

Connecting Wireless Devices Manually

You can connect wireless devices with the FRITZ!Box manually. Wireless devices like notebooks, tablets and smartphones use the wireless LAN software of their own operating system for this connection. A wireless LAN adapter at the USB port of your computer can use the wireless LAN software of your computer or a wireless LAN program of its own. No matter what program is used to establish the wireless LAN connection, the principle is the same: the wireless LAN software searches for a wireless radio network in the vicinity and, after authorization with a network key, enables the wireless LAN connection between the FRITZ!Box and your wireless device.

1. Make sure that the wireless LAN function of the FRITZ!Box is enabled and the “WLAN” LED is on. If “wireless LAN” is not on, press the “WLAN” button briefly.
2. Start the wireless LAN software of your wireless device. Consult the documentation of your wireless device for instructions.
3. Search for the wireless radio network of your FRITZ!Box. Upon delivery this network is called “FRITZ!Box 3272”.

4. Enter the network key of the FRITZ!Box.

With this, the wireless LAN connection is established. Your wireless device is integrated into your home network and can use the Internet connection of the FRITZ!Box.

12.2 Connecting Wireless Devices with the FRITZ!Box Guest Access

With the FRITZ!Box you can provide your guests with an Internet connection of their own. At this guest access they can surf the web with their own smartphones or tablets, but cannot access the contents of your home network.

You can set up a guest access if you have connected the FRITZ!Box directly to your DSL line. If the FRITZ!Box is connected in another way, for instance to a cable modem, you cannot set up guest access.

Configuring Wireless LAN guest access

1. Open the FRITZ!Box user interface.
2. Make sure that the wireless radio network (WLAN) is enabled in the “WLAN / Radio Network” menu.
3. Select the “WLAN / Guest Access” menu and enable guest access.
4. Assign a name for the guest wireless network (SSID) and enter a network key at least 20 characters long under “Security”.

This concludes the setup of your guest access. Now guests can register their wireless devices with the FRITZ!Box.

Registering a Device with the Wireless LAN guest access

1. Your guest starts the wireless LAN software of his wireless device, searches for your guest wireless network and enters the network key you specified for authorization.
2. The wireless LAN connection will be established.

Your guest’s wireless device can use the Internet connection of the FRITZ!Box, but has no access to your home network. For more information, see the Online Help.

12.3 Switching the Wireless Radio Network On and Off by Schedule

You can switch the wireless radio network of the FRITZ!Box automatically according to a schedule. This function is called “Night Service”. It reduces the power consumption of the FRITZ!Box by completely turning off the WLAN module. The FRITZ!Box Night Service also affects any other FRITZ!Box products connected in the network (the FRITZ!WLAN Repeater, for instance): the wireless transmission of these devices is also switched on and off in the FRITZ!Box settings.

1. Open the FRITZ!Box user interface (see page 26).
2. Open the “System / Night Service” menu.
3. Enable the schedule for the wireless radio network.
4. Configure the settings for Night Service:
 - With the options “Switch WLAN off daily” and “Switch WLAN off according to timetable” you define the intervals for switching.
 - You can also select the option “The radio network cannot be switched off until no more wireless devices are active”.
5. Click “Apply” to save your settings.

Now FRITZ!Box Night Service is enabled and configured.



For more information on settings, see also the Online Help.

Switching Wireless LAN On and Off

You can switch the wireless radio network of the FRITZ!Box on and off at any time, even when the device is hibernating.

- Press the “WLAN” button on the FRITZ!Box briefly

12.4 Extending a Wireless LAN Network

The range of a wireless radio network is not specified. It depends on

- the wireless devices you are using for your wireless LAN connections
- interference in the vicinity of your wireless radio network
- the structural conditions where you operate the wireless radio network
- the number of wireless devices in the vicinity of your FRITZ!Box that work in the same frequency range

You can extend the range of your wireless radio network with a wireless repeater.

Or you can set up a second FRITZ!Box as a wireless repeater.

Extending a Wireless LAN Radio Network with a Wireless Repeater

You can extend the range of your wireless radio network with a wireless repeater. In combination with the FRITZ!Box the AVM FRITZ!WLAN Repeater is especially suitable. All models of the FRITZ!WLAN Repeater series can be integrated into your wireless radio network and your home network by WPS quick connect. Find out more in the Internet at:

avm.de/en/Produkte/FRITZ_WLAN

Using an Existing FRITZ!Box as a Repeater

You can extend the wireless LAN radio network of your FRITZ!Box with an additional FRITZ!Box you already have. To extend your wireless LAN, configure the repeater function in this device.

You can configure a FRITZ!Box as a repeater by working through the following steps:

1. Open the FRITZ!Box user interface.
2. Select the “System/View”menu.

3. Select the “Advanced View” option and confirm by clicking “Apply”.
4. Select the “WLAN/Repeater” menu and follow the instructions displayed on the screen.

See the Online Help of the FRITZ!Box for more information.

12.5 Wireless LAN—Getting Technical

A wireless LAN radio network is based on standards defined by the Institute of Electrical and Electronic Engineers (IEEE). These standards describe, for instance, the transmission speeds, encryption methods and frequencies used in a wireless LAN network.

Data Throughput

The FRITZ!Box supports your choice of the standards IEEE 802.11b, IEEE 802.11g and IEEE 802.11n. Wireless devices based on one or more of the standards listed can be used for wireless LAN connections with the FRITZ!Box.

Standard	Frequency Band	Gross Data Throughput up to	Net Data Throughput up to
802.11b	2.4 GHz	11 Mbit/s	5 Mbit/s
802.11g	2.4 GHz	54 Mbit/s	25 Mbit/s
802.11n	2.4 GHz	450 Mbit/s	150 Mbit/s

IEEE 802.11b

With a maximum throughput rate of 11 Mbit/s, this is the oldest wireless standard. Older wireless devices of the first generation can communicate with the FRITZ!Box using 802.11b. However, if the wireless device supports newer standards such as 802.11g, the latest standard should be used.

IEEE 802.11n

This standard allows for high throughput rates and ranges. The FRITZ!Box supports 802.11n in the 2.4-GHz frequency band. Modulation processes and antenna techniques like MIMO (Multiple Input, Multiple Output) use the frequency band more effectively than the older standards.

The use of the 802.11n standard—and thus the availability of higher throughput rates—is possible only if the wireless LAN connection is secured using the WPA2 security mechanism (AES-CCMP).

Setting the Right Standard in the FRITZ!Box

The throughput rate that can be achieved in your wireless radio network depends on the wireless LAN standards used by the integrated devices. These wireless LAN standards must also be set in the FRITZ!Box. Proceed as follows to check which wireless LAN standards are set and change them if needed:

1. Open the FRITZ!Box user interface.
2. Enable the advanced view.
3. Open the “WLAN / Radio Channel” menu and select “Adjust radio channel settings” to make the desired changes.

Make a note of which standards the wireless devices in your network are compatible with and then adjust the FRITZ!Box settings according to the following information:

11n, 11g
In your radio network there are only wireless devices that are compatible with one or both of the following standards: • 802.11n • 802.11g
Set the following mode in the FRITZ!Box: 802.11n+g

11g, 11b
In your radio network there are only wireless devices that are compatible with one or both of the following standards: • 802.11g • 802.11b
Set the following mode in the FRITZ!Box: 802.11b+g

11n, 11g, 11b
In your radio network there are only wireless devices that are compatible with one or all of the following standards: • 802.11n • 802.11g • 802.11b
Set the following mode in the FRITZ!Box: 802.11n+g+b

The Standard for Security

IEEE 802.11i

The WPA2 security mechanism is defined in the IEEE 802.11i standard. WPA2 is an extension of the familiar security mechanism WPA (Wi-Fi Protected Access).

The main feature of the extension of WPA to WPA2 is the AES-CCMP encryption process.

Mechanism	Encryption
WPA	TKIP (Temporary Key Integrity Protocol)
WPA2	TKIP AES-CCMP based on the extremely secure AES (Advanced Encryption Standard) procedure. CCMP (Counter Mode with CBC-MAC Protocol) defines how the AES procedure is applied to wireless LAN packets.

FRITZ!Box supports the AES encryption procedure as part of the WPA2 mechanism, and the TKIP encryption procedure as part of the WPA mechanism. This means that the FRITZ!Box can be used in combination with any wireless devices that also support WPA2 with AES or WPA with TKIP.

Frequency Ranges

Wireless LAN uses the frequency ranges at 2.4 GHz and 5 GHz as its transmission range.

With the FRITZ!Box you can establish wireless LAN connections in the 2.4-GHz range.

2.4-GHz frequency band

In the 2.4-GHz frequency band wireless LAN works in the same range as Bluetooth, microwave devices and various other devices like radio-controlled toys, garage-door openers and video bridges. This means that interference may occur within wireless networks operated in the vicinity of such devices. Generally this has adverse effects on the transmission rate, including aborted connections.

In the 2.4-GHz frequency range the European regulation authorities have designated 13 channels for wireless LAN.

A channel can have a bandwidth of 20 MHz (throughput of up to 216 Mbit/s) or 40 MHz (throughput of up to 450 Mbit/s).

Channels located directly next to each other in the 2.4-GHz band may overlap and result in mutual interference. For instance, if several wireless networks are operated close to each other in the 2.4-GHz frequency range with a bandwidth of 20 MHz, a distance of at least five channels should be left empty between each two channels used. This means that if channel 1 is selected for one wireless network, the channels 6 through 13 can be selected for a second wireless network. This maintains the minimum distance between channels.

Should interference in a wireless network persist, the first step should be to select a different channel.

WLAN Autochannel

With the WLAN Autochannel function, the FRITZ!Box automatically searches for the channel subject to the least interference. This process takes into consideration interference from radio networks in the vicinity (wireless access points) and potential sources of interference (for instance video bridges, baby monitors, microwave ovens). Should problems with interference persist despite this function, try to identify the source of interference and switch it off manually.

Allocation of the Wireless LAN Channels in the 2.4-GHz Range

Channel	Frequency (GHz)	Channel	Frequency (GHz)
1	2.412	8	2.447
2	2.417	9	2.452
3	2.422	10	2.457
4	2.427	11	2.462
5	2.432	12	2.467
6	2.437	13	2.472
7	2.442		

13 The FRITZ!Box Home Network

The FRITZ!Box connects your network devices, USB devices and storage devices in what we call a FRITZ!Box home network. In the home network the FRITZ!Box makes data like images, music and videos available to all connected users and allows them to share a printer.

Network Devices

- Network devices include, for instance, computers, game consoles and smartphones that are connected with the FRITZ!Box via a network cable connection or via wireless LAN.
- All network devices can access each other's folders released for sharing.
- The USB devices connected to the FRITZ!Box can be accessed by all network devices at the same time, and available memory can be shared.

If you would like to learn more about the possibilities of network devices in your FRITZ!Box home network, continue reading in the chapter Network Devices in the FRITZ!Box Home Network from page 88.

USB Devices

USB devices include, for instance, printers, multi-function devices, and flash memory on the USB ports of the FRITZ!Box.

Connected USB devices can be used jointly and simultaneously by all network devices of your FRITZ!Box home network.

For more information about how to best configure USB devices in your home network and how to use them securely, see the chapter USB Devices in the FRITZ!Box Home Network from page 100.

Storage (NAS)

The memory of the FRITZ!Box includes storage media like flash memory or hard drives connected to the USB ports of the FRITZ!Box.

What is more, the FRITZ!Box can manage online storage configured on the server of your telecommunications provider.

For more information about how to access the memory in your FRITZ!Box home network safely and conveniently, see the chapter Accessing USB Memory from page 102.

FRITZ!Box name

You can assign an individual name for your FRITZ!Box in the FRITZ!Box user interface. The name is set up under “Home Network / FRITZ!Box Name” and appears in the following areas of your home network display:

- Name of the wireless radio network (SSID)
- Name of the guest radio network (SSID)
- name of the working group released for home network sharing
- Name of the media server
- Push service sender name

14 Network Devices in the FRITZ!Box Home Network

All network devices connected with the FRITZ!Box comprise a network. Network devices include, for instance, computers, game consoles and smartphones. The devices can be connected with the FRITZ!Box by cable or wirelessly. This chapter describes the network settings in the FRITZ!Box and how you can change them. You will also learn how you can change the IP settings for the computer in the most common operating systems.

14.1 Network Settings in the FRITZ!Box

The FRITZ!Box is delivered with preconfigured network settings. According to these settings, all network devices connected with the FRITZ!Box are located in a single network.

The network settings can be changed and adapted to your conditions and needs. But you should do so only if you are well versed in networking technology.

Network Overview

The FRITZ!Box user interface shows an overview with all of the devices and users connected with the FRITZ!Box.

The network overview “Devices and Users” is found in the menu “Home Network / Network”.

- For each user and each network device, you find an entry in the network overview. The columns have the following meanings:
- If you use FRITZ!Powerline devices in your network, then the FRITZ!Powerline devices are entered in the network overview along with the network devices connected to the FRITZ!Powerline devices.
- The Network Overview is divided into the areas “Active Connections”, “Guest Network” and “Idle Connections”.

For each user and each network device, you find an entry in the network overview. The columns have the following meanings:

Symbol	A green LED before the device name indicates that a device is actively connected with the FRITZ!Box, but not using the Internet connection at this time. A green-blue globe indicates that the device is currently using the Internet connection.
Name	This column displays the name under which the user or the network device is known to the FRITZ!Box. The names of network devices can be changed by clicking the button to edit the entry.
IP address	For network devices, also displayed is the IP address with which the device is integrated into the FRITZ!Box network.
Connection	The wireless LAN icon is displayed for wireless connections.
Properties	This column indicates whether port forwarding or child protection is enabled for the respective user or network device.
	Button for editing the entry The button opens the entry in editing mode. This view displays information about the network device, for instance on child protection or port forwarding settings. The name of the device in the FRITZ!Box can be changed here.
	Button for deleting the entry Users or network devices that do not have an active connection to the FRITZ!Box can be deleted from the network overview by clicking this button.

Accessing Network Devices by Mouse Click

Network devices that can be reached over the http protocol can be accessed within the home network by the click of a mouse. Clicking the device name opens the user interface of the http application.

Always Assigning the Same IP Address

The editing mode for network devices includes the setting “Always assign this network device the same IP address”.

When this setting is enabled for a network device, the DHCP server of the FRITZ!Box will always assign the same IP address to this device each time the connection is established.

Starting the Computer—Wake on LAN

The Wake on LAN function of computers can be enabled in the editing mode for network devices. The computers must support Wake on LAN and be connected with the FRITZ!Box with a network cable. The Wake on LAN function is also available when the devices are connected via FRITZ!Powerline devices.

Wake on LAN is a function that allows a computer in the local network to be started when it is accessed from the Internet. For instance, you can access a computer using remote maintenance software, without wasting electricity by keeping the computer switched on permanently. The computer must be in standby operation.

The FRITZ!Box supports Wake on LAN both for IPv4 and for IPv6 connections.

- The “Start Computer” Button

 You can start the computer each time it is accessed over the Internet by clicking the “Start Computer” button.

- Starting Automatically

 To do this, enable the setting “Start this computer automatically as soon as it is accessed from the Internet”. When the computer is accessed from the Internet, it is started automatically.

IPv4 Settings in the FRITZ!Box

The IPv4 settings of the FRITZ!Box are preset upon delivery with the following values:

Factory Settings	
IPv4 address	192.168.178.1
Subnet mask	255.255.255.0
DHCP server	enabled

The IP address and the corresponding subnet mask yield the following values:

Network address of the subnet	192.168.178.0
Entire IPv4 address range for the computers	192.168.178.2 - 192.168.178.254

The following IPv4 addresses cannot be assigned because they are reserved for certain purposes:

This IP address is used by the FRITZ!Box itself	192.168.178.1
This IP address is the broadcast address used to send messages into the network	192.168.178.255

IP Address in Case of Emergency

The FRITZ!Box has a fixed IP address that cannot be changed. The FRITZ!Box always can be reached at this IP address.

fixed IP address	169.254.1.1

For instructions about how to handle fixed IP addresses, see the section Opening the User Interface Using an Emergency IP Address from page 116.

IPv4 Address in the FRITZ!Box

Upon delivery the FRITZ!Box is assigned the following IPv4 address:

192.168.178.1

If you would like to change the IPv4 address, please read through the following sections.

When Does It Make Sense to Change the IPv4 Address?

You should change the IPv4 address of the FRITZ!Box if the following apply to your network:

- You have an existing local IPv4 network, one subnet with several computers.
- Fixed IPv4 addresses are registered in the network settings of the computer, and you do not want to or are not permitted to change these addresses.
- You want to connect the FRITZ!Box to the local IPv4 network in order to make the FRITZ!Box features available to all of the computers in the IPv4 network.

Reserved IP Addresses

The entire IP network 192.168.180.0 in the FRITZ!Box is reserved for internal purposes.

IPv4 addresses from this network may **not** be assigned to the FRITZ!Box.

DHCP Server for IPv4

The FRITZ!Box is equipped with its own DHCP server for the IPv4 network. The DHCP server is enabled by default in the factory settings. The following range of IP addresses is reserved for the DHCP server in the factory settings:

192.168.178.20 - 192.168.178.200

This IP address can be changed as needed.

Every time the operating system on a computer connected with FRITZ!Box is started, the DHCP server assigns it an IPv4 address from the IP address range of the DHCP server.



Only one DHCP server may be active within any network.

Assigning the IP addresses via the DHCP server ensures that all of the computers connected with the FRITZ!Box are located in the same IP network.



The computers can receive their IPv4 addresses from the DHCP server only if the setting “Obtain an IPv4 address automatically” is enabled in the their IP settings. For more information, see the section Obtaining an IP Address Automatically from page 96.

Fixed IPv4 Addresses When the DHCP Server Is Enabled

If you would like to configure fixed IPv4 addresses on individual computers connected with the FRITZ!Box despite the enabled DHCP server, please note the following:

- The IPv4 addresses must be from the IPv4 network of the FRITZ!Box.
- The IPv4 addresses may not come from the address range of the DHCP server.
- Each IPv4 address can be assigned only once.

Disabling the DHCP Server

You can disable the DHCP server.

To make sure that all computers remain in the same IP network when the DHCP server is disabled, you must enter the IPv4 addresses manually in the computers’ network settings. First disable the option “Obtain an IP address automatically” and then enter the IP address manually in the appropriate field.

In the case of the preset IPv4 address of the FRITZ!Box, the following IPv4 addresses are available for assignment to the computers:

192.168.178.2 - 192.168.178.254



Here too: each IPv4 address can be assigned only once.

Changing Network Settings

1. Enable the advanced view in the user interface.
2. Select the “Home Network / Network” menu.
3. Select the “Network Settings” page.
4. Click the “IPv4 Addresses” or “IPv6 Addresses” button, depending on the address range you would like to change.



Please note that changes to the network settings in the FRITZ!Box may make it necessary to adjust the network settings of your computers so that you can continue to access the FRITZ!Box user interface.

IPv6 Settings in the FRITZ!Box

The following settings options for IPv6 are found in the advanced view in the “Home Network / Network” menu on the “Network Settings” page.

Additional IPv6 Routers in the Home Network

- IPv6 Prefixes from Other IPv6 Routers

 You can allow the network devices connected to the FRITZ!Box to receive IPv6 prefixes announced by other IPv6 routers in the local network.

- Also announce DNSv6 server via router advertisement

 With this setting you specify that the FRITZ!Box announces the local DNSv6 server in the local network via router advertisement. Alternatively, the network devices can identify the local DNSv6 server via DHCPv6.

IPv6 Settings

Click the “IPv6 Addresses” button to configure settings for the IPv6 addresses in the local network.

Unique Local Adresses

The communication within the local network takes place via the Unique Local Addresses (ULA). If no IPv6 Internet connection is established, the network devices do not have a ULA and communication between them is restricted. For this case you can set the FRITZ!Box such that the network devices receive the ULA from the FRITZ!Box.

DHCPv6 Servers in the Home Network

The FRITZ!Box is equipped with its own DHCPv6 server. The DHCPv6 server of the FRITZ!Box is switched on by default.

The DHCPv6 server assigns the network devices their IPv6 settings. These settings are used instead of the data in the router advertisement messages. The DNS server, IPv6 prefixes or IPv6 addresses can all be assigned by DHCPv6. Define which IPv6 settings should be assigned by the DHCPv6 server.

UPnP Settings

The Universal Plug-and-Play (UPnP) service included in your FRITZ!Box provides status information about the FRITZ!Box to all connected computers. UPnP-compliant programs on these computers can receive this information and use them to display the status of the FRITZ!Box (e.g., connection status, data transmission). UPnP service thus allows you to monitor your FRITZ!Box from a connected computer.

Here is how to change the UPnP settings:

1. Open the FRITZ!Box user interface (see page 26).
2. Enable the advanced view.
3. Configure the UPnP settings in the “Home Network / Network” menu on the “Programs” page.

Setting Up Guest Access via LAN 4

The network port “LAN 4” can be configured as a guest access. Guests can then connect their laptops to the guest access with a network cable to access the Internet. The guest device does not have access to the home network.

Set up the guest access as follows:

1. Open the FRITZ!Box user interface.
2. In the “Home Network / Network” menu, select the “Network Settings” page.
3. Enable the guest access.

14.2 Obtaining an IP Address Automatically

The FRITZ!Box has its own DHCP server, which assigns IP addresses to the connected computers. The connected computers must be configured such that they can receive their IP addresses automatically. The steps for checking and adjusting this option differ among the operating systems. See the relevant section for your operating system.

If FRITZ!Box is operated in a network, no other DHCP server may be activated in this network.

Obtaining an IP Address Automatically in Windows

Open the network connections:

- Windows 8

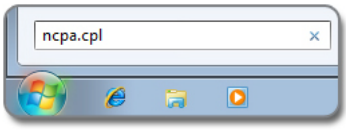
 Press the Windows key and the Q key at the same time. The search menu for apps is opened. Enter “ncpa.cpl” in the search field and click enter.



Entering “ncpa.cpl” in Windows 8

- In Windows 7 and Windows Vista

 Click “Start”, enter “ncpa.cpl” in the search line of the Start menu, and press Enter.



Entering “ncpa.cpl” in Windows 7

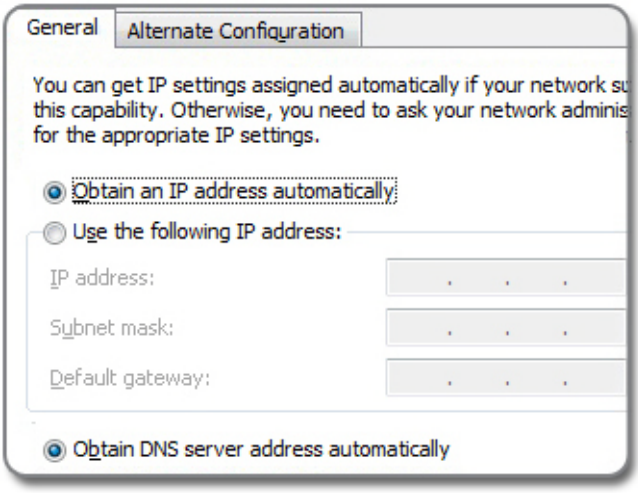
- In Windows XP

 Select “Start / Run”, enter “ncpa.cpl” and then click “OK”.

Configure the settings:

1. Click the network connection between the computer and the FRITZ!Box with the right mouse button and select “Properties”.
2. **Windows XP:** Under “This connection uses the following items”, select Sie “Internet Protocol (TCP/IP)”.

 Windows 8, Windows 7 and **Windows Vista:** Under “This connection uses the following items”, select “Internet Protocol Version 4(TCP/IPv4)”.
3. Click the “Properties” button.
4. On the “General” tab, enable the options “Obtain an IP address automatically” and “Obtain DNS server address automatically”.



5. Click “OK” to save the settings.
6. Only in **Windows 8**, **Windows 7** and **Windows Vista**: Enable the options “Obtain an IPv6 address automatically” and “Obtain DNS server address automatically” for the Internet Protocol Version 6 (TCP/IPv6) as well.

The computer now receives an IP address from the FRITZ!Box.

Obtaining an IP Address Automatically in Mac OS X

1. Select the “System Preferences...” in the Apple menu.
2. In the “System Preferences” window, click the “Network” icon.
3. In the “Network” window, select the “Built-in Ethernet” entry from the “” list.
4. Switch to the “TCP/IP” tab and select the “Using DHCP” option from the “Configure IPv4:” drop-down list.
5. Click “OK”.

The computer now receives an IP address from the FRITZ!Box.

Obtaining an IP Address Automatically in Linux

For comprehensive information and tips on the topic of network settings in Linux, see, for example:

www.linux.org/docs/ldp/NET3-4-HOWTO-5.html

15 USB Devices in the FRITZ!Box Home Network

The FRITZ!Box has two USB ports to which you can connect various USB devices. All network devices in the FRITZ!Box home network can use these USB devices jointly and simultaneously.

This chapter describes how to share a printer in the network, which USB devices can be used in your FRITZ!Box home network, and how to use these devices safely.

15.1 Power Supply for USB Devices

You can connect USB devices with the following properties to the FRITZ!Box:

- Some USB devices require more than one USB port for operation, for instance, hard drives with a USB Y cable. Connect this type of USB devices to the FRITZ!Box using a USB hub with its own power supply.
- The total current consumption of connected USB devices without their own power supply may not exceed 500 mA. Check the rating plates of the connected USB devices.

 USB devices that exceed the total current consumption of 500 mA can be connected to the FRITZ!Box using a USB hub with its own power supply.

15.2 USB Devices on the FRITZ!Box

These USB devices can be connected to the FRITZ!Box:

- You can connect up to four USB storage media like hard disks, USB flash drives or card readers.
- USB storage media must use the file systems EXT2, FAT, FAT32 or NTFS. On storage media with the FAT and FAT32 file systems you can use files up to a size of 4 GB. In the EXT2 and NTFS file systems there is no limit to the size of files that can be used.
- You can connect **one** standard USB printer or **one** all-in-one device with scanner and fax function. The complete range of functions available in a all-in-one printers device is guaranteed only with the USB remote connection

of the FRITZ!Box (see also: Sharing a USB Printer on page 103).

- You can connect a USB hub to the FRITZ!Box and use up to four USB devices at this hub.

 You can use USB hubs with or without a separate power supply. We recommend deploying a USB hub with its own power supply if the USB devices to be connected exceed a total current consumption of 500 mA (see also: Power Supply for USB Devices on page 100).

- You can connect a USB modem. With a USB modem the FRITZ!WLAN USB Stick can establish the Internet connection via the mobile communications network (UMTS/HSPA) (see also: Configuring an Internet Connection for the Mobile Network on page 33).

- You can connect a USB stick from the FRITZ!WLAN USB Stick series by AVM to conveniently establish secure wireless LAN connections using AVM Stick & Surf (see: Establishing a Wireless Connection with AVM Stick & Surf on page 22).

15.3 Using USB Devices Safely

Follow the instructions below about how to use USB devices on your FRITZ!Box.

- The FRITZ!Box can not defend the USB memory from external influences. This means that voltage spikes or drops, like those that occur during electrical storms, may lead to data losses on connected USB storage media. We recommend making regular backups of the USB memory contents to avoid any losses.

- Whenever you want to remove USB devices from the FRITZ!Box, go to the “Home Network / USB Devices” area in the FRITZ!Box user interface to remove them safely and avoid any loss of data.

15.4 Configuring Access Rights

You can protect the data on your USB storage from unauthorized access by securing the user interface of your FRITZ!Box with a password. In the “System / FRITZ!Box Password” menu you can

- configure a shared password that is requested every time anyone in your home network accesses the FRITZ!Box and the connected USB storage media.
- configure various FRITZ!Box users. You can configure a password for each FRITZ!Box user and then specify which connected USB storage media each user is allowed to access.

A USB storage medium connected to the FRITZ!Box can be reached in the home network by entering the shared FRITZ!Box password. From the Internet you can reach the USB storage medium only by logging in with your individual user name and password.

Information on the user controls of your FRITZ!Box is presented in the section Password Protection: Security for the FRITZ!Box from page 37.

15.5 Accessing USB Memory

The participants in the home network have various possibilities for accessing the various storage media of the FRITZ!Box.

- Home network members can access the contents of connected USB memory and all other memory of the FRITZ!Box especially conveniently with FRITZ!NAS. For this FRITZ!NAS offers a graphic interface and allows data exchange by drag & drop. Continue reading from section FRITZ!NAS: Storage in the Home Network on page 110.

- Participants in the home network can use FTP software like FireFTP to exchange files among the FRITZ!Box storage media and workplaces.

 Alternatively, you can enter ftp://fritz.box in the address line of your Internet browser to access the storage media of the FRITZ!Box.

 If you would like to use FTP software, see the documentation of the software as well as the instructions in the Online Help of the FRITZ!Box user interface.

- For access to media data like music, images and videos available on the memory or on storage media of the FRITZ!Box you can enable the FRITZ!Box media server. Suitable playback devices like TV sets, web radios, smartphones and the Windows Media Player can then call up the data for streaming from the media server.

 Playback devices to be used in connection with the media server must support the UPnP AV standard. The term “DLNA” is often used to designate this support.

 Enable the “media server” function in the FRITZ!Box user interface under “Home Network / Storage (NAS) / Options Enabled”.

15.6 Sharing a USB Printer

You can connect a USB printer to the FRITZ!Box to make it available to all participants in your home network. You can either release the printer for sharing as a network printer or use the FRITZ!Box USB remote connection software to connect it with a computer.

Using a USB Printer as a Network Printer

Configure the USB printer as a network printer on the FRITZ!Box if

- the participants in the home network are to be able to use the printer jointly and simultaneously.
- the printer is to be used by computers that use an operating system other than Windows.

For information about how to configure a USB printer as a network printer, see the section Setting Up a USB Printer as a Network Printer on page 104.

Using a USB Printer with FRITZ!Box USB Remote Connection

Configure the USB printer on the FRITZ!Box with the FRITZ!Box USB remote connection if

- the USB printer is an all-in-one device (fax/printer/scanner) and the entire range of functions is to be used.
- the USB printer is equipped with convenience features like ink level display and you would like to use these.
- the USB printer uses bidirectional data exchange. In other words: Not only does the computer send data to the printer, the printer also sends status messages to the computer. This communication in both directions is typical of the “Windows printers” or “GDI printers” that work only with special Windows device drivers.

For information about how to configure a USB printer with the USB remote connection, continue reading from the section Configuring a USB Printer with FRITZ!Box USB Remote Connection on page 107.

Setting Up a USB Printer as a Network Printer

Connect the USB printer to the USB port of the FRITZ!Box.

Preparing Configuration

1. Open the FRITZ!Box user interface.
2. Click “System” and then “View”.
3. Select “Advanced View” and click “Apply”.
4. Select the “Home Network / USB Devices” menu.
5. Select the “USB Remote Connection” tab.
6. Disable the option “printers (including all-in-one printers)”.
7. Save your settings by clicking “Apply”.
8. Connect the USB printer to the FRITZ!Box.

This concludes the preparations. Continue reading in the section for your operating system.

Setting Up a USB Printer in Windows 7, Vista or XP

1. Click “Start / Control Panel” and select the printer category of your operating system:
 - “Devices and Printers” (Windows 7)
 - “Printers” (Windows Vista)
 - “Printers and Faxes” (Windows XP)
2. Click the printer icon with the right mouse button and select “Properties” or “Printer properties”.



If the printer is not displayed, you must first install the printer drivers for this device. Consult the documentation of your printer for instructions.

3. Switch to the “Ports” tab.
4. Click “Add”.
5. Double-click the “Standard TCP/IP Port” entry and click “New Port”, then “Next”.
6. Enter “fritz.box” in the “Printer name or IP address” field.



If the FRITZ!Box is configured as a WLAN repeater or an IP client, enter here the IP address at which the FRITZ!Box can be reached within the network.

7. Enter any name you wish in the “Port name” field and click “Next”.
8. Select the “Custom” option and click “Settings...”.
9. Enable the “Raw” option.
10. Enter “9100” in the “Port number” field and click “OK”.
11. Click “Next” and confirm with “Finish” and “Close”.
12. In the “[Printer name] properties” window, switch to the “Ports” tab.

13. Disable the “Enable bidirectional support” option and click “Apply”.

The USB printer has been configured and can be used as a network printer.

Setting Up a USB Printer in Windows 8

1. Press the keyboard shortcut “Windows key” + "X" and select “Control Panel” from the context menu.
2. Click on “Hardware and Sound” and select “Devices and Printers”.
3. In the menu bar, click “Add a printer”.
4. In the “Add a printer” window, select “The printer that I want isn’t listed” and then “Next”.
5. Enable the option “Add a printer using TCP/IP address or hostname” and click “Next”.
6. Enter “fritz.box” in the “Host name or IP address”: field.



If the FRITZ!Box is configured as a wireless repeater or an IP client, enter here the IP address at which the FRITZ!Box can be reached within the network.

7. Click “Next”.
8. Click “Next” and confirm with “Finish”.

The USB printer has been configured and can be used as a network printer.

Setting Up a USB Printer in Mac OS X version 10.5 or higher

1. In the dock, click “System preferences”.
2. Click “Print & Fax”.
3. Click the “+” sign.
4. Click “IP Printer”.
5. In the “Protocol:” drop-down list, select the entry “HP Jet Direct – Socket”.
6. Enter “fritz.box” in the “Address:” input field.



If the FRITZ!Box is configured as a wireless repeater or an IP client, enter here the IP address at which the FRITZ!Box can be reached within the network.

7. In the “Print Using:” drop-down list, select the printer that is connected to the USB port of your FRITZ!Box.



If the printer is not displayed, you must first install the printer drivers for this device. Consult the documentation of your printer for instructions.

8. Click “Add”.

The USB printer has been configured and can be used as a network printer.

Setting Up a USB Printer in Other Operating Systems



The names of entries or menus in other operating systems not described above may be slightly different than the terms we use here.

- As the port type, select “Raw TCP”.
- Enter “9100” as the port.
- As the printer name, enter “fritz.box”.



If the FRITZ!Box is configured as a wireless repeater or an IP client, enter here the IP address at which the FRITZ!Box can be reached within the network.

Configuring a USB Printer with FRITZ!Box USB Remote Connection

If you are using an all-in-one device or would like to use the convenience features of a USB printer connected to the FRITZ!Box, we recommend installing the FRITZ!Box USB remote connection software. The FRITZ!Box USB remote connection program can be installed on computers with Windows 8, Windows 7, Vista or XP (32- and 64-bit).

Installing FRITZ!Box USB Remote Connection

Install the program for FRITZ!Box USB remote connection on all of the computers with which you want to use the connected USB device.

1. Connect the USB printer to the USB port of the FRITZ!Box.
2. Open the FRITZ!Box user interface.
3. Enable the advanced view.
4. Select the “Home Network / USB Devices / USB Remote Connection”.
5. Click the “USB remote connection software” link.
6. In the window “USB Remote Connection” click “Download”.
7. Download the file “fritzbox-usb-fernanschluss.exe”.
8. Double-click the file and follow the instructions on your screen.

The FRITZ!Box USB remote connection software is now installed on your computer. Repeat the steps in these instructions for all other Windows users who wish to use the USB remote connection on this computer.

Enabling the FRITZ!Box USB Remote Connection

1. Open the FRITZ!Box user interface.
2. Enable the advanced view.
3. Select the “Home Network / USB Devices / USB Remote Connection”.
4. Enable the USB remote connection for printers and select the option “printers (including all-in-one printers)”.

 For an all-in-one printer with a memory function, also enable the “USB storage media” option.

 For an all-in-one printer with a scanner function, also enable the “others (e.g. scanner)” option.
5. Click “Apply”.

The FRITZ!Box USB remote connection is enabled.

Using a USB Printer with FRITZ!Box USB Remote Connection

1. Open the FRITZ!Box USB remote connection by clicking the  icon in the Windows task bar.
2. Enter in the “My FRITZ!Box” area the FRITZ!Box password.
3. Click “Refresh”.
4. Click the USB printer in the “Devices” area.

The USB printer is being connected to the computer.



Do not conduct any firmware updates for USB devices that are connected with the computer via the FRITZ!Box USB remote connection.

16 FRITZ!NAS: Storage in the Home Network

With FRITZ!NAS you can display the data on the storage media of your FRITZ!Box in a clearly arranged interface. All participants in the FRITZ!Box home network can start FRITZ!NAS in a web browser and use it as a platform to access music, images, videos and documents in the FRITZ!Box memory.

16.1 Prerequisites for FRITZ!NAS

In order to use FRITZ!NAS, your computer must have a web browser installed that supports HTML5 (for instance, Internet Explorer version 9 or higher, Firefox version 17 or higher, or Google Chrome version 23 or higher).

16.2 Starting FRITZ!NAS

1. Open a web browser.
2. Enter “fritz.nas” in the address line.
3. FRITZ!NAS opens and displays the storage media enabled in the FRITZ!Box.

16.3 FRITZ!NAS Password Protection

Access to FRITZ!NAS and thus to the storage media of the FRITZ!Box can be protected by defining a password in the user interface. In the “System / FRITZ!Box Password” menu you can

- configure a shared password that is requested every time anyone in your home network accesses the FRITZ!Box and FRITZ!NAS.
- configure various FRITZ!Box users. You can configure a password for each FRITZ!Box user and then specify which FRITZ!NAS contents each user is allowed to access.

FRITZ!NAS can be reached in the home network by entering the shared FRITZ!Box password. From the Internet you can reach FRITZ!NAS only by logging in with your individual user name and password.

Information on the user controls of your FRITZ!Box is presented in the section Password Protection: Security for the FRITZ!Box from page 37.

17 Saving Energy with FRITZ!Box

The FRITZ!Box combines a variety of devices in one device: ADSL modem , wireless router and media server. This means that you generally use much less power with the FRITZ!Box than you would with several separate devices.

What is more, the FRITZ!Box saves energy by reducing processing power on standby and lowering the power consumption of idle functions. The FRITZ!Box also offers various settings for energy-saving operation.



The current energy consumption of the total FRITZ!Box system is displayed on the “Overview” page. From there, click with the mouse to view the Energy Monitor, which displays details on the energy consumption.

17.1 Saving Energy with the Wireless Radio Network

You can reduce the power consumption of the wireless radio network by

- setting up night service for the wireless radio network (see page 79).
- turning off the wireless radio network with the “WLAN” button whenever no more wireless devices are registered on the FRITZ!Box.
- reducing the transmitter power of the FRITZ!Box. You can adjust the transmitter power using the “Maximum transmitter power” setting in the “WLAN / Radio Channel” menu of the FRITZ!Box user interface.

17.2 Enabling Energy-saving Mode for USB Hard Drives

In the FRITZ!Box you can enable an energy-saving function for USB hard drives connected to the FRITZ!Box. When the energy-saving function is enabled, connected USB hard drives will be switched off when they are idle—as long as the hard drives support the energy-saving function.

Enable the energy-saving function in the “Home Network / USB Devices” menu in the FRITZ!Box user interface. You can also test here whether your USB hard disk supports the energy-saving function.

17.3 Saving Energy at the LAN Ports

For energy-efficient use of your gigabit LAN ports, in the “LAN settings” you can specify for each individual LAN port whether it should always operate at full power (power mode) or should reduce its energy consumption (green mode). With green mode you can reduce the power consumption of the FRITZ!Box to the level necessary for your applications.

The LAN ports can be configured in the advanced view of the FRITZ!Box user interface (see page 28). In the “Home Network / Network / Network Settings” menu you can select from among the following operating modes in the “LAN Settings” area:

Operating mode	Functionality and Power Consumption
Power Mode	In this setting LAN connections are established with a maximum throughput of 1 Gbit/s. Higher power consumption than in green mode
Green mode	As needed, the FRITZ!Box establishes LAN connections with a data throughput rate of 100 Mbit/s. Lower power consumption than for the “power mode” setting.

18 Help in Case of Errors

For more help, see the AVM Knowledge Base in the Internet: avm.de/en/service

18.1 The User Interface Does Not Open

If the FRITZ!Box user interface cannot be opened, this can have various causes.

Work through the following steps in sequence until the error has been resolved.

Enter http://fritz.box in the web browser

Enter http://fritz.box in the web browser instead of fritz.box.

Google Chrome, for instance, performs a Google search if the address of the FRITZ!Box is not known and entered incompletely.

Restarting the FRITZ!Box

1. Disconnect the FRITZ!Box from the power supply.
2. Wait about five seconds before reconnecting to the power supply.
3. Wait until the LEDs “Power” and “WLAN” (only if wireless LAN is switched on) light up.

The FRITZ!Box is ready for operation again.

Clearing the cache of your web browser

If the web browser shows only an empty, white page, empty the cache:

Firefox

1. Click on the orange Firefox button and select “History / Clear Recent History”.

 Or click “Tools” in the menu bar and select “Clear Recent History”.

2. In the “Clear Recent History” dialog, select “Everything”, and under “Details”, check only the “Cache” option.

3. Click “Clear Now”.

Internet Explorer

1. Click the “Extras” button and select “Internet Options”.

2. On the “General” tab, click the “Clear History” button.

3. Enable the “Temporary Internet files” option and click “Delete”.

Google Chrome

1. Click on the Chrome menu (“Customize and Control Google Chrome” button) and select “History / Clear Browsing Data”.

2. Select “the beginning of time”, and below it only the option “Empty the cache”.

3. Click “Clear browsing data”.

Other Web Browsers

If you use a different web browser, see the help of the browser for instructions on how to clear the cache.

Checking the Proxy Settings of the Web Browser

If a proxy server is enabled in your web browser, the address of the FRITZ!Box must be entered as an exception. Check your web browser settings.

Firefox

1. Click on the orange Firefox button and select “Options / Options”.

 Or click “Tools” in the menu bar and select “Options”.

2. Select “Advanced / Network”.

3. Under “Connection”, click the “Settings...” button.

4. If the option “Manual proxy configuration” is enabled, enter fritz.box in the “No Proxy for:” field and then click “OK”.

 If the manual proxy configuration is not enabled, click “Cancel”.

Internet Explorer

1. Click the “Extras” button and select “Internet Options”.

2. Switch to the “Connections” tab and click the “LAN settings” button.

3. If the “Use a proxy server for your LAN” option is enabled, click on “Advanced”. Under “Exceptions” enter fritz.box and click “OK”.

 If no proxy server is used, click “Cancel”.

Google Chrome

Check whether the use of a proxy server is enabled. If so, enter fritz.box as an exception in the proxy server settings.

Google Chrome uses the proxy settings of your operating system (Windows or Mac OS). For more information, go to Google Chrome Help and enter the keyword “network settings”.

Other Web Browsers

Check whether the use of a proxy server is enabled. If so, enter fritz.box as an exception in the proxy server settings.

For more information on the proxy settings, see the Help for your web browser.

Configuring the Computer's Network Adapter

On your computer, enable the setting "Obtain an IP Address Automatically" for the network adapter used to connect to the FRITZ!Box. For instructions, see page 96.

Opening the User Interface Using an Emergency IP Address

The FRITZ!Box has an "emergency IP address" (169.254.1.1) at which it can always be reached. You can use this IP address as follows:

1. Connect your computer to the "LAN 2" port of the FRITZ!Box using a LAN cable.
2. If your computer is already connected with the FRITZ!Box over wireless LAN, clear the wireless connection.
3. Make sure that the computer obtains its IP address automatically (see page 96).
4. Clear all other connections between your FRITZ!Box and other network devices.
5. In the web browser, enter the address 169.254.1.1..
6. When the FRITZ!Box user interface is displayed, enable the DHCP server of the FRITZ!Box:

 In the user interface, select "Home Network / Network / Network Settings". Click the "IPv4 Addresses"button, enable the option "Enable DHCP server" and click "OK".

18.2 Cannot Establish a Wireless LAN Connection

If you cannot establish a wireless LAN connection between your computer and the FRITZ!Box, this may be due to a variety of causes.

Work through the following steps in sequence until the error has been resolved.

Switching on the Computer's Wireless LAN Adapter

The wireless LAN adapter in your computer must be ready for operation. On many notebooks the built-in wireless LAN adapter can be switched on by pushing a button or entering a key combination.

For more information, see the manual of your computer.

Announcing the Name of the Wireless Radio Network

If the wireless LAN software on your computer cannot find the wireless radio network of the FRITZ!Box, make the following setting in the FRITZ!Box:

1. Connect a computer to the FRITZ!Box with a network cable (see page 17).
2. Open the FRITZ!Box user interface (see page 26).
3. Select "WLAN / Radio Network".
4. Enable the option "Name of the radio network visible".
5. Click "Apply".
6. Remove the network cable and establish a connection via wireless LAN.

Entering the correct wireless LAN key

If you establish the wireless connection manually, enter the correct network key, which is found in the user interface of your FRITZ!Box:

1. Connect a computer to the FRITZ!Box with a network cable (see page 17).
2. Open the FRITZ!Box user interface (see page 26).
3. Select “WLAN / Security”.
4. Take note of the wireless LAN key or click “Apply” and print out the wireless LAN security settings.

18.3 Wireless LAN Connection Interrupted

If the wireless LAN connection between your computer and the FRITZ!Box is disrupted, this may be due to a variety of causes. Work through the following steps in sequence until the error has been resolved.

Position the FRITZ!Box and wireless devices correctly

Often all that is needed is to position the FRITZ!Box and wireless devices in different locations to improve the wireless LAN connection:

- Do not set up the FRITZ!Box in the corner of a room.
- Do not set up the FRITZ!Box directly next to or beneath an obstacle or a metal object (like a cabinet or radiator).
- Position the FRITZ!Box and your wireless devices so that there are as few obstacles between them as possible.

Configure automatic radio channel selection

Configure automatic selection of the radio channel in the FRITZ!Box. Then the FRITZ!Box will automatically select a radio channel with as little interference as possible.

1. Open the FRITZ!Box user interface (see page 26).
2. Select “WLAN / Radio Channel”.
3. Enable the option “Set radio channel settings automatically (recommended)”
4. Click “Apply”.

19 Taking FRITZ!Box out of Operation

In this chapter you receive tips and recommendations for taking the FRITZ!Box out of operation.



Please also follow our instructions for the correct disposal of waste equipment on page 131.

19.1 Restoring Factory Settings

When the factory settings are restored to the FRITZ!Box, all of the settings in the FRITZ!Box are restored to their condition upon delivery. This way you can delete incorrect settings that prevent the FRITZ!Box from functioning properly.



Restoring the factory settings is also recommended if you would like to pass the FRITZ!Box to another user.

Resetting the FRITZ!Box has the following effects:

- All settings you made in the FRITZ!Box will be deleted.
- The network key in the factory settings will be activated again.
- The IP configuration of the factory settings will be restored.

Preparing to Load Factory Settings

Before loading the factory settings of your FRITZ!Box, save your settings.

Saving FRITZ!Box Settings

Before loading the factory settings, save all of the settings you made in your FRITZ!Box to a backup file. With this backup file you can restore your settings to the FRITZ!Box at any time or load them to another FRITZ!Box. See the section Saving the FRITZ!Box Settings from page 28 for more information.

Loading Factory Settings



We recommend saving the settings configured on your FRITZ!Box in a backup file (see page 28).

1. In the FRITZ!Box user interface, select the “System / Reset” menu.
2. Select the “Factory Settings” tab.
3. Click the “Load Factory Settings” button.

The FRITZ!Box is reset to its factory settings. All settings made during operation will be overwritten.

19.2 Uninstalling Supplementary Software

Additional software for the FRITZ!Box is available on the web pages of AVM at avm.de/en/download.

If you have installed supplementary programs on one or more computers, uninstall this software using the control panel of your Windows operating system.

Uninstalling Programs in Windows 8

1. Press the Windows key and the X key at the same time.

 A menu is opened that contains all of the important functions of Windows 8.
2. Click on the “Programs and Features” entry.

 The “Uninstall or change a program” list shows all of the programs installed on your computer.
3. Mark the AVM program you want to remove in the list.
4. Click the “Uninstall” button.

The program will be removed.

Uninstalling Programs in Windows 7

1. Open “Start / Control Panel / Programs”.
2. Under “Programs and Features”, click “Uninstall a program”.
3. Mark the AVM program you want to remove in the list.
4. Click the “Uninstall/Change” button.

The program will be removed.

Uninstalling Programs in Windows Vista

1. Open “Start / Settings / Control Panel / Programs and Functions”.
2. Mark the AVM program you want to remove in the list.
3. Click the “Uninstall/Change” button and confirm with “Continue”.

The program will be removed.

Uninstalling Programs in Windows XP

1. Open “start / Control Panel / Add or Remove Programs”. Make sure that the “Change or Remove Programs” button is selected in the column at left.
2. Mark the AVM program you want to remove in the list of “Currently installed programs”.
3. Click the “Change/Remove” button.

The program will be removed.

20 Technical Specifications

Facts worth knowing: Here you will find comprehensive technical data on your FRITZ!Box 3272.

20.1 Ports and Interfaces

- ADSL/ADSL2/ADSL2+ modem compliant with DT AG 1TR112 (also IP-based, Annex J), or alternatively ITU G.992.1, ITU G.992.3 or ITU G.992.5 (Annex B or J)
- Four LAN ports via RJ45 sockets
 - LAN 1 and LAN 2: standard Ethernet, 10/100/1000 Base-T
 - LAN 3 and LAN 4: standard Ethernet, 10/100 Base-T
- Two USB host controllers (USB version 2.0)
- wireless LAN access point with support for wireless networks in the 2.4-GHz frequency band
 - IEEE 802.11b – 11 Mbit/s
 - IEEE 802.11g – 54 Mbit/s
 - IEEE 802.11n – 450 Mbit/s

20.2 Router Functions

- Router
- DHCP server
- Firewall with IP masquerading/NAT
- IPv4 and IPv6
- Child protection and filter lists
- Port forwarding rules
- Dynamic DNS
- VPN

20.3 User Interface and Display

- Configuration and status messages via a web browser on a connected computer
- five LEDs indicate the condition of the device

20.4 Physical Specifications

- Dimensions (W x D x H): approx. 210 x 25 x 155 mm
- Supply voltage: 230 V / 50 Hz
- Maximum power consumption: 12 W
- FRITZ!OS can be updated
- Conforms to CE standards
- Ambient Conditions
 - Operating temperature: 0 °C – +40 °C
 - Storage temperature: -20 °C – +70 °C
 - relative humidity (operation): 10% – 90%
 - relative humidity (idle): 5% – 95%

20.5 Cable

Network Cable

The network cable (yellow) of the FRITZ!Box 3272 is a standard category 5 (Cat 5) Ethernet cable. Please use a standard STP-type (Shielded Twisted Pair) Ethernet cable of category 5 (Cat 5) to replace or extend the Ethernet cable. To extend the cable you will need a shielded RJ45 double coupling (Cat 5) with a 1:1 pin assignment. You can use both straight cables and crosslink cables. All components are available from specialized vendors.

When components of a category smaller than Cat 5 are used, reduced transmission rates may result.

AVM recommends using a network cable no more than 100 meters long.

21 Customer Service

Be it product documentation, frequently asked questions, tips or support: this chapter presents information on all important service topics.

21.1 Documentation on the FRITZ!Box

To take advantage of all commands and features of your FRITZ!Box, consult the following documentation:

Help

In the FRITZ!Box user interface you can open the comprehensive Online Help by clicking the “Help” icon and the “Help” buttons.

Manual

The PDF file of the manual can be opened and downloaded from the Internet at the following address:

avm.de/en/service/manuals

Choose the “FRITZ!Box” product group and then your “FRITZ!Box 3272”. The PDF is opened.



The current Adobe Acrobat Reader for reading PDF documents can be downloaded from the Internet free of charge at www.adobe.com.

21.2 Information in the Internet

On its web site AVM presents comprehensive information on your AVM product.

Videos on the FRITZ!Box

Videos on many of the FRITZ!Box functions are available, showing animated demonstrations of how to set up the individual functions. The videos can be viewed at the following address:

avm.de/en/service/fritz.clips

AVM Knowledge Base

In our AVM Knowledge Base you can find answers to your questions and specific solutions to your problems. The AVM Knowledge Base is located in the “Service” area of the AVM web site:

avm.de/en/service

21.3 Feedback on FRITZ!Box

In various places in the user interface, the FRITZ!Box offers you the opportunity to send your concrete feedback to AVM. Your feedback helps us to continually improve the FRITZ!Box.

When you submit your feedback, only the technical data and no personal data are transmitted to AVM. These data are used for the exclusive purpose of product improvement. A corresponding message appears in the Event Log, stating that the feedback was sent to AVM.

Evaluating the DSL Connection

On the “Internet / DSL Information / Feedback” page you can evaluate your DSL connection. This makes it possible to optimize your DSL performance with upcoming firmware updates.

Evaluating the Wireless LAN Connection

On the “WLAN / Radio Network / Known WLAN Devices / Feedback” page you can evaluate your satisfaction with the wireless LAN connection between the FRITZ!Box and the wireless device. This information helps AVM optimize the wireless LAN properties of the FRITZ!Box.

21.4 Support from the Support Team

Should problems with your FRITZ!Box arise, we recommend taking the following steps:

1. If you have questions about starting operation of your FRITZ!Box, please consult the following chapters again:
 - Before You Connect the FRITZ!Box from page 11
 - Connecting the FRITZ!Box from page 14

– Connecting the Computer to the FRITZ!Box from page 17

2. If you have any problems, seek first aid by consulting the chapter Help in Case of Errors from page 113.

 This chapter also presents tips on problems with establishing connections.

3. Read our tips from the AVM Knowledge Base in the “Service” area.

 avm.de/en/service

 This site contains answers to questions our customers have frequently asked our Support team.



Please take advantage of the information sources described above before contacting AVM support.

Support by e-mail

You can send us an English-language e-mail request at any time using the “Service” area of our web site. The “Service” area can be reached at:

www.avm.de/en/service

1. Select the product group and your product for which you need support from the “Support” area.

 You will receive a selection of FAQs.

2. If you need more help, click the “Contact support” button to open the e-mail support form.

3. Fill out the form and send it to AVM by clicking the “Submit support request”.

Our Support team will respond by e-mail as quickly as possible.

21.5 Manufacturer's Warranty

We offer a manufacturer's warranty of five years on the hardware of this original product. The warranty period begins with the purchase date from the first end user. Compliance with the warranty period can be proven by submission of the original invoice or comparable documents. This warranty does not restrict your warranty rights based on the contract of sale or other statutory rights.

Within the warranty period, we will remove defects to the product which are demonstrably due to faults in materials or manufacturing. Our warranty does not cover defects which occur due to incorrect installation, improper use, non-observance of instructions in the user manual, normal wear and tear or defects in the environment of the system (third-party hardware or software). We may, at our discretion, repair or replace the defective product. Claims other than the right to the removal of defects which is mentioned in these terms of warranty are not constituted.

We guarantee that the software conforms with general specifications, not, however, that the software meets your individual requirements. Delivery costs will not be reimbursed. Products which have been replaced revert to our ownership. Claims recognized under warranty entail neither an extension or recommencement of the warranty period. If we reject a warranty claim, this claim lapses no later than six months after being rejected by us.

This warranty shall be governed by German substantive law, to the exclusion of the United Nations Convention on Contracts for the International Sale of Goods (CISG).

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Declaration of CE Conformity

The manufacturer AVM GmbH
Alt-Moabit 95
D 10559 Berlin
Germany

herewith declares that the product

FRITZ!Box 3272
ADSL wireless router

complies with the following directives:

1999/5/EC	R&TTE Directive: Radio Equipment and Telecommunications Terminal Equipment
2009/125/EC	EU directive: ecodesign requirements for energy-related products
2011/65/EU	EU directive: on the restriction of the use of certain hazardous substances in electrical and electronic equipment

The following norms were consulted to assess conformity:

- EN 60950-1:2006/A1:2010
- EN 55024:2010
- EN 301 489-1 V1.8.1
- EN 301 489-17 V2.2.1
- EN 300 328 V1.7.1
- EN 62479:2010

CE The CE symbol confirms that this product conforms with the above mentioned norms and regulations.

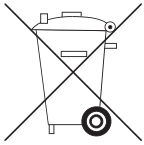
Berlin, 11-14-2012 Peter Faxel, Technical Director

Indication of Countries
This device is designed for use in all countries of the European Union and in Switzerland, Norway, Liechtenstein and Iceland.

Disposal Information

In accordance with European regulations, the FRITZ!Box 3272, as well as all devices and electronic components contained in the package, may **not** be disposed with household waste.

Please bring FRITZ!Box 3272 to a collection point in your local community for the disposal of electric and electronic appliances after use.



Symbol for the separate collection of electric and electronic devices

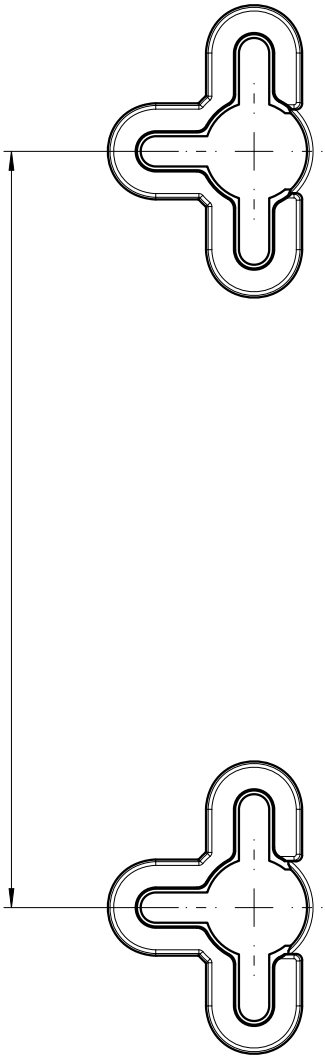
Note the symbol for the separate collection of electric and electronic devices. FRITZ!Box 3272 and the electronic parts included with delivery must be disposed of separately from household waste.

Drilling Template

See the next page for a drilling template. Use the drilling template as a guide to mark the holes needed to mount the FRITZ!Box on a wall.



Be sure to print out the page with the drilling template in its original size, or 100%. Do not enlarge it, adjust its size, reformat or rescale it in your printer settings.



Index

A

access rules 60
advanced view 28
ambient conditions 124
analog extension 8
apps
 MyFRITZ!App 52
autochannel (wireless LAN) 85
AVM Stick & Surf 22

B

blocking Internet pages 60
button
 wireless LAN 9
 WPS 9

C

cable
 network cable 124
cable connection (broadband) 15, 33
CE conformity declaration 130
child protection 60
connecting
 behind router 16
 computer 17
 DSL 15
 FRITZ!WLAN USB Stick 22
 LAN 17
 to electrical power 14
 to LAN port 17
 to network hub/switch 18
 to wireless LAN 19
 USB devices 100
connecting computer 17
connecting to DSL 15
connecting to electrical power 14
copyright 129
customer service 125

D

declaration of CE conformity 130
DHCP server (integrated) 92
disposal 131
DNS server 71
DNSSEC 71
documentation 125
drilling template 132
dynamic DNS 65

E

emergency IP address 91
ending operation 120
energy consumption 124
energy savings 111
evaluating
 DSL connection 126
 wireless LAN connection 126
exposed host 63

F

factory settings
 DHCP server 92
 IPv4 address 92
 loading with FRITZ!Box 120
 restoring 120
feedback 126
filter 60
firmware update
 automatic search 58
 performing 55
FRITZ!Box password
 forgotten password 47
 quick access 40
 setting up 39
FRITZ!Box user account
 configuring 40
 disabling 46
 forgotten password 47
 ftpuser 45
 quick access 45
 rights 43

FRITZ!NAS
password protection 110
prerequisites. 110
starting 110
FRITZ!OS 55
FRITZ!WLAN USB Stick 22

G

guest access
LAN4 96
wireless LAN 78

H

help
customer service 125
knowledge base 126
manual 125
support team 126
user interface 125
videos 125
hibernation 79
home network
network devices 88
overview 86
storage (NAS) 110
USB devices 100
HSPA (mobile network). 16, 33, 74
HTTPS. 66
hub
network 18
USB 101

I

imprint 129
information in the Internet
knowledge base 126
videos 125
instructions
handling 13
security 12
interfaces. 123
internal memory 120
Internet access 43, 66
restricting times 60
via mobile network. 33
Internet connection
configuring 32
configuring for DSL. 32
over LAN1 34
via cable modem 15, 33
via mobile network. 16
Internet filter 60
Internet protocol version 6. 72
Internet router. 60
IP address
changing 94
emergency 91
in Linux 99
in Mac OS X. 98
in Windows 96
obtaining automatically. 96
IPv4
address 92
settings 91
IPv6 72

L

LAN
connection 17
guest access 96
LEDs. 10
legal notice 129

M

manufacturer's warranty 128
media server 102
mobile network 16, 33, 74
MyFRITZ!
configuring 49
Internet access 43
Personal Cloud Service 49
security 54
setting up an account. 50
using 51
MyFRITZ!App 52

N

NAS 110
network
- changing settings 94
- connection 17
- factory settings 91
- IPv4 settings 91
- network hub/switch 18
- network overview 88
- network settings 88
- prioritization 67
- UPnP settings 95

network cable 124
network devices 88
- home network 88
- remote maintenance of computer . 90
- wake on LAN 90

night service 79
notice
- legal 129

O

operation requirements 11
overview
- information about FRITZ!Box 26

P

package contents 11
password protection
- comparison of methods 37
- configuring FRITZ!Box users 40
- forgotten password 47
- setting up a FRITZ!Box password . . 39

personal cloud service 49
physical specifications 124
PIN method (WPS) 20
port forwarding 63
port forwarding IPv6 63
ports 8, 123
power consumption 124

R

recycling
- electrical equipment 131
- electronic equipment 131

remote access (VPN) 69
remote maintenance 66
requirements for operation 11

S

saving data 120
saving energy 111
schedule 79
security
- FRITZ!Box password 39
- FRITZ!Box user account 40
- installing and connecting 12
- password protection 37
- wireless LAN 76

settings
- applying 28
- Internet access 43
- IP address 96
- network 91
- protecting 37
- restoring 28
- saving 28, 120

smartphone 52
software
- firmware 55
- uninstalling 121

standard view 28
starting operation, requirements for . . 11
Stick & Surf 22
storage (NAS) 110
streaming 102
support
- by e-mail 127
- information in the Internet 125

switch 18
symbols in the manual 6

T

technical specifications 123
tips
- password protection 37

U

UMTS
- Internet access 33
- Internet connection 16
- substitute connection 74

uninstalling programs. 121
uninstalling supplementary software 121
update 55
updating firmware. 55
UPnP settings 95
USB
- accessing memory 102
- modem 101
- ports 8
- storage media. 100

USB devices
- device types 100
- home network. 100

user account
- configuring 40
- disabling 46
- forgotten password 47
- ftpuser. 45
- quick access 45
- rights 43

user interface
- applying settings 28
- opening. 26
- restoring settings 28
- saving settings 28

V

videos 125
views
- advanced view 28
- standard view 28

VPN
- client 70
- configuration wizard. 70
- remote access. 69
- supplementary software 70

W

wake on LAN 90
warranty. 128
Wi-Fi Protected Setup (WPS) 20
wireless devices 19
wireless LAN
- access point 9
- connecting manually 77
- establishing a connection 19
- extending a radio network. 80
- frequency ranges 84
- guest access 78
- range 80
- security 76
- switching on and off. 79
- switching on/off 9
- WPS 20, 77

wireless LAN connection
- establishing manually 23
- with FRITZ!WLAN USB Stick 22
- with Stick & Surf. 22
- with WPS 20

wireless LAN frequency ranges 84
wireless LAN Repeater 80
Wireless Local Area Network 76
WLAN Autochannel 85
WLAN button 9
WPS
- PIN method 20
- push-button configuration (WPS-PBC) 20

WPS button 9